

# Learning & Leading

WITH TECHNOLOGY

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Computational Thinking:  
A Skill for Everyone

Should Schools  
Be Held Responsible  
for Cyberbullying?



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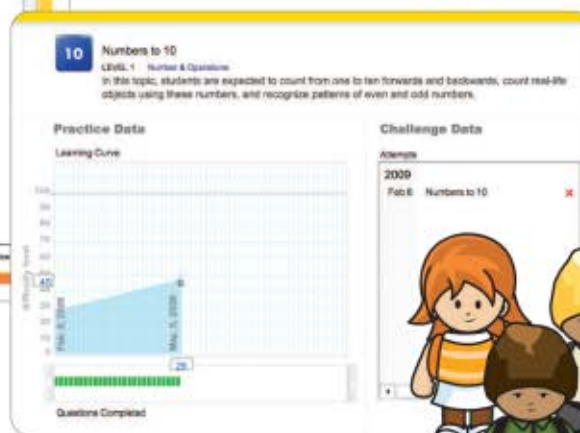
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#### DATES & TIMES

April 6 <sup>th</sup> 1pm-7:30pm	April 7 <sup>th</sup> 9am-5pm	April 8 <sup>th</sup> 9am-3:30pm
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#### LOOK FORWARD TO

- ▶ Inspirational keynotes
- ▶ Over two dozen breakout sessions
- ▶ App sharing
- ▶ Interactivity
- ▶ Panel discussions
- ▶ Scavenger hunts
- ▶ Networking
- ▶ Hands-on and minds-on time
- ▶ Sharing your passion with others

#### LOCATION

Hyatt Regency Downtown  
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#### PLANNED TOPICS INCLUDE

- ▶ Web-based tools
- ▶ Netbooks and laptops
- ▶ iPhone, iPod touch, and iPad
- ▶ Mobile phones
- ▶ Classroom management
- ▶ One-to-one learning environments
- ▶ Personalized learning
- ▶ Inquiry learning
- ▶ Research about mobile learning
- ▶ Assistive technology
- ▶ Science, math, and language
- ▶ Higher order thinking

#### SPEAKERS INCLUDE \*

**Travis Allen**  
iSchool Initiative  
Kennesaw, Georgia

**Graham Brown-Martin**  
Learning Without Frontiers  
London, United Kingdom

**Derek Keenan**  
Rocky View Schools  
Alberta, Canada

**Scott Meech**  
The Joseph Sears School  
Kenilworth, Illinois

**Mark van 't Hooft**  
Research Center for Educational  
Technology  
Kent State, Ohio

**Tony Vincent**  
Learning in Hand  
Phoenix, Arizona

**Susan Wells**  
Culbreth Middle School  
Chapel Hill, North Carolina

\*More To Be Announced

For Registration and Event Information  
Visit Us Online at [mobile2011.org](http://mobile2011.org)



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## FEATURES

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## Helping Students Express Their Passion

By Michelle Mann

The global philanthropic organization, Adobe Youth Voices, gets to the root of the achievement gap by inspiring kids to actively engage in their own education with digital media technologies.

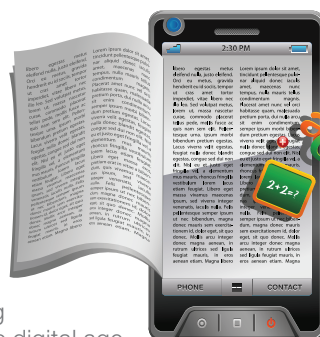
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## Not Your Grandmother's Library!

By Lisa Perez

Is your school still relying on an industrial age library that lacks modern technology? Learn how tech-savvy librarians are blazing a path to student success in the digital age.

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## Computational Thinking A Digital Age Skill for Everyone

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The National Science Foundation has assembled a group of thought leaders and educators to define *computational thinking* and make it accessible to students of all disciplines.

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#### Letters to the Editor

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By Kate Conley

Kate Conley is ISTE's periodicals director and the editor of L&L. Her first career was as an English teacher in the San Francisco Bay Area. She holds a master's degree in journalism and a bachelor's in English. Conley has been with ISTE for more than 10 years.



## Connecting to the World

About 10 years ago, we ran an article titled in *L&L* patterned after the iconic *Wizard of Oz* line, “Lions and tigers and bears, oh, my!” It doesn’t really matter which three technologies we replaced those animals with back then because, of course, they’ve kept changing. Today, it could easily be “Twitter and Facebook and Skype, oh, my!” What is important is that tech tools like these and others have significantly expanded our ability to connect with people across the globe.

In a recent blog post, Jim Vanides, education program manager in Hewlett-Packard’s Office of Global Social Innovation, discusses the need to increase students’ global awareness. However, our world has grown so flat that the jobs our current K–12 students will seek after college will demand not just mere global awareness or even literacy, but fluency as well. The good news, though, is that tech tools are making it easier to help our students connect to and with the world. (See the Resources section for a link to this blog post and other tools.)

This issue of *L&L* illustrates how global initiatives (our target topic for this issue) are providing valuable experiences for students and creating collaborative opportunities for educational organizations worldwide.

In “Helping Students Express Their Passion,” Michelle Mann describes the Adobe Youth Voices project (see page 10). Students from around the globe are creating videos on topics they are excited about and sharing them with the world. Not only are they using technology effectively to

tell their stories, but they are gaining self-esteem, giving back to others, and “creating with purpose” through this unique initiative.

ISTE is also striving to build global fluency through a wide range of activities, including translating books and webinars into several languages. For more on what we’re doing, see Don Knezek’s ISTE in Action column on page 48 about how we’re working with other associations, NGOs, and ministries of education to advance excellence in learning and teaching.

Beyond the articles in this issue, I hope you’ll find the resources listed here especially helpful to get your students on their way to building global fluency. The Global Education Conference Partners List in particular is a good place to explore dozens of organizations that offer resources related to global issues.

### Resources

#### Books

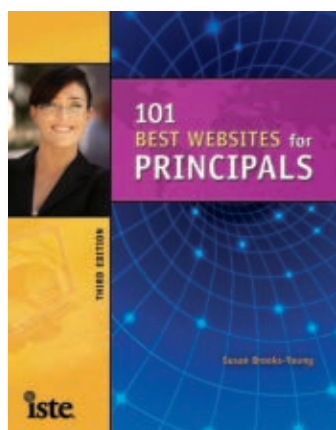
*Multiculturalism in a Global Society* by Peter Kivisto  
*When China Rules the World: The End of the Western World and the Birth of a New Global Order* by Martin Jacques

#### Websites

Adobe Youth Voices: [www.youthvoices.adobe.com](http://www.youthvoices.adobe.com)  
Asia Society’s International Studies Schools Network: <http://tinyurl.com/24qbdg>  
Asia Society’s Partnership for Global Learning: <http://tinyurl.com/22l4vgj>  
CoolHub: [www.coolhub.imsa.edu](http://www.coolhub.imsa.edu)  
ePals: [www.epals.com](http://www.epals.com)  
Global Education Conference Partners List: [www.global-education-conference.com/partners.html](http://www.global-education-conference.com/partners.html)  
iEARN: [www.iearn.org](http://www.iearn.org)  
Jim Vanides’ blog: <http://tinyurl.com/2ak532l>

# Books for Every Educator

## New!



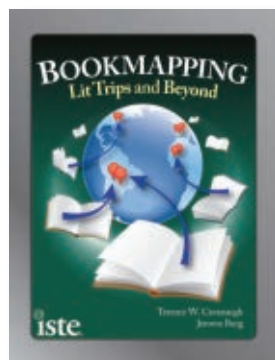
### 101 Best Websites for Principals

Third Edition

By Susan Brooks-Young

Find new sites, revised descriptions, resources for Web 2.0 tools, and information on Internet security and safety in this updated guide to the most relevant and useful Web-based resources for principals.

## Available in April



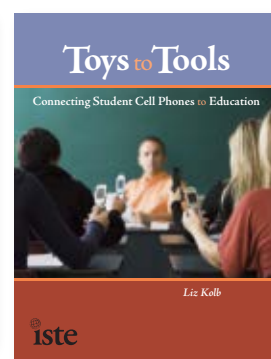
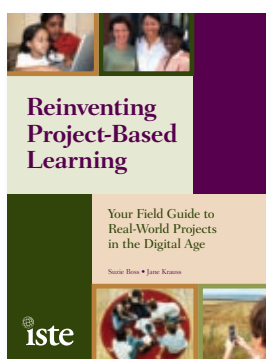
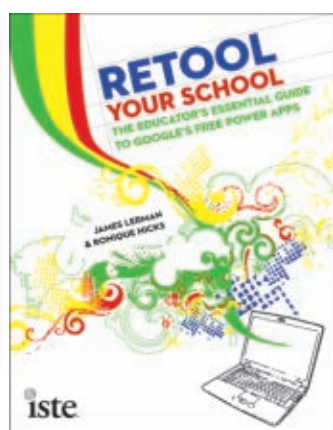
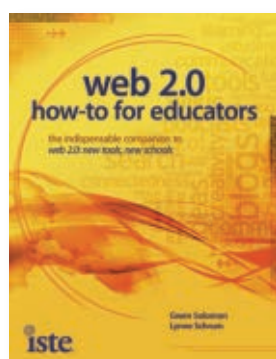
### Bookmapping

Lit Trips and Beyond

By Terence W. Cavanaugh and Jerome Burg

Use discovery, exploration, and technology to take the experience of reading to a whole new level. With bookmapping, students can connect literature with geography and expand their understanding of places, people, and what they're learning and reading.

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[iste.org/bookstore](http://iste.org/bookstore)





## Should Schools Be Held Responsible for Cyberbullying?

### Yes

Technology has created a way for children to harass and bully each other in damaging and inescapable ways. Whether cyberbullying takes place on or off school grounds, it is clear that it greatly affects the school environment. That means that the individuals associated with the school cannot ignore it. In fact, to deal effectively with this problem, all educational stakeholders—teachers and administrators as well as parents and the students themselves—must work together, because if one group is not on board, then cyberbullying will continue to be pervasive in the culture of teenagers.

**Teachers.** Teachers of all grade levels need to learn what cyberbullying is and address it. They need to listen to students who come to them to report cyberbullying. They need to know the rules and laws in place as well as the kinds of resources that are available to help victims. And they need to be



Renee Bogacz

### No

Considering the role of schools in society, they clearly cannot be held responsible for cyberbullying. So many schools today are full of children with serious behavioral problems that did not begin in, and cannot be solved in, the classroom. This is not the fault only of parents, but also of society, because we have ceased to seriously support the family as an institution. The high number of bullying cases is a consequence of the weakening of the family, and that cannot be the responsibility of schools.

The elements that are necessary to prevent a child from becoming the offender in bullying come from the root, the basic starting point in education, which is love.

Children who have been taken care of from the beginning of their lives with parental love already have the vaccine against bullying. Some children bully others because they lack this very basic ingredient that should



Miguel Gómez Gordillo

willing to document cases of reported or observed cyberbullying and never assume such behavior is typical of children and teenagers.

**School administrators.** In addition to all of the above, administrators need to establish clear and enforceable consequences. They also need to be willing to contact law enforcement to send a strong and clear message that cyberbullying is simply not tolerated.

**Parents.** Parents should always be involved in what their children are doing online and with their cell phones. This should include “friending” their own children on social networking sites as well as checking their cell phone and computer histories. Parents should have access to and passwords for their children’s e-mail addresses, instant messaging accounts, and social networking sites, and if they see something inappropriate, they should

**Whether cyberbullying takes place on or off school grounds, it is clear that it greatly affects the school environment.**

demand that the child remove the offending material, or the parents should take it down. If this seems like overkill, keep in mind that being passive about what children do online can lead to disastrous consequences. Just ask the parents of Ryan Halligan, Megan Meier, and Phoebe Prince—children who all took their own lives.

**Students.** Bystanders need to understand what cyberbullying is and be educated about what they can do to help. Too often students are unwilling to stand up for those they see being victimized because they are afraid of drawing some of the same disdain to themselves. Kids should learn that if they see cyberbullying taking place, they should be assertive in assisting victims by standing up for them and reporting it.

The victims of cyberbullying should never be expected to just deal with the problem on their own. Rather, they should expect their harassment to be taken seriously and see that it is dealt with. They should also receive counseling as necessary to learn strategies for dealing with cyberbullies.

If all of these stakeholders take a role in combating cyberbullying, then we will have the benefit of seeing it diminish and can move toward a culture of tolerance and respect among children and teens. When the majority of one group does not come on board, everyone else’s efforts fall flat.

—Renee Bogacz has taught language arts for 20 years at Channahon Junior High School in Illinois. She regularly uses technology in her classroom and develops and presents on cyberbullying and Internet safety for her school district.

have come from home, and the result is a higher incidence of bullying as well as other types of negative behavior at school. Many, if not all, of these behaviors, could be drastically reduced if children began receiving more support at home.

Unfortunately, getting love at home these days can be difficult. How can children get it if both parents are away from home most of the day? How can they get it if they live in a broken home? How can they get it if their parents don’t have the appropriate education and are unaware that loving their children requires much more than giving them food to eat, clothes on their backs, and a roof over their heads?

We need to remember that parents are the first educators of their children. Schools and other institutions come next, so their powers are limited. What these institutions can do is establish close communication with

**The high number of bullying cases is a consequence of the weakening of the family, and that cannot be the responsibility of schools.**

parents to discover and understand the educational plan that each family has for its children, then provide all available resources to support those plans at school. In some cases, schools may need to guide parents in the preparation of the plan itself. Of course, given the number of students in some schools and the type of education they offer, this is not always possible. Although some schools do offer this type of personalized education, others lack the resources, and many offer but fail to deliver it.

That doesn’t mean that these schools can’t do anything to help with cyberbullying. On the contrary, they can do—and some schools are doing—a lot of work to help families recover their role as primary educators. Many schools have found out

that effective education for children can happen only if they help educate their families. It is so much easier to educate when there is an understanding between the family and school, and both institutions educate collaboratively, complementing each other. But in the end, a healthy family is the basis for a healthy society, and schools can only support that role.

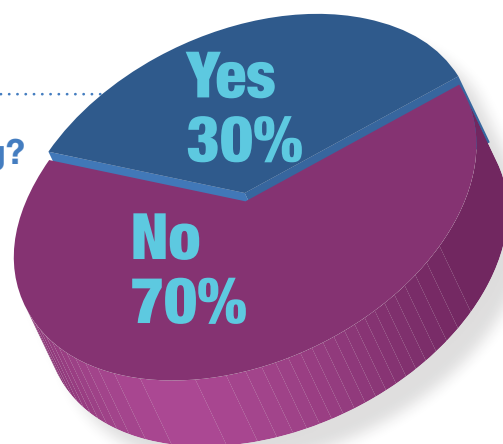
—Miguel Gómez Gordillo is IT director for the Asociación para el Desarrollo Educativo (Association for Education Development), which manages K–12 schools in Guatemala. He is also a board member of Instituto de Colaboración y Educación Familiar (Institute of Family Collaboration and Education), which organizes programs for family guidance.

To contribute to this and future discussions, go to L&L’s group page on the ISTE Community Ning at [iste-community.org/groups/LandL](http://iste-community.org/groups/LandL).

## POLL RESULTS

### Should Schools Be Held Responsible for Cyberbullying?

Most respondents say it would be unrealistic for schools to monitor students' at-home online activities for evidence of cyberbullying.



#### New World Needs New Ideas

I hope that the latest devastating stories are the last of their kind and that parents and educators realize the new generation of students they are encountering. These students have a new world of knowledge at their fingertips but also have more opportunities to fall into the traps of bullying and harassment. Together, schools and guardians can band together and guide these innovative minds down a path of new ideas and progress.

*Rachel Ann Clink*  
Student  
Holland, Ohio

#### Cyberbullying = Abuse

In New York State, school officials are required by law to report suspected child abuse or maltreatment to the New York State Central Register (SCR) of Child Abuse and Maltreatment. The law also assigns civil and criminal liability to those professionals who do not comply with their mandated reporter responsibilities.

*Aimee Wieler*  
Instructional Technology Coach  
Buffalo, New York

#### Can't Control Student Choice

I think that schools are responsible for teaching students about cyberbullying and the consequences, but students make their own choices. Schools can not be held responsible for things that happen outside of the school grounds.

*Lori Jo Weller Lister*  
Comment on ISTE's Facebook page

#### The Means to Monitor

Schools definitely need to be held responsible for any cyberbullying that takes place during school hours. Programs are available that allow teachers to monitor every student's computer screen when students are working in computer labs or on individual computers, which can reduce the amount of cyberbullying that takes place. Many schools also have rules that students cannot have their cell phones with them during the school day.

*Beth Harris*  
Student Teacher  
Bowling Green, Ohio

#### Team Effort

Schools should be accountable for educating their students about the ignorance that exists in the misuse of these media tools. Parents should be accountable in sharing life skills by developing empathy at a young age and social emotional skills that will help shape this child's moral character and judgment. Teachers should be accountable for facilitating experiences that teach students about consequences of their behavior both on and offline and the intentional and unintentional impact of their decisions.

*Jennifer Gaspar-Santos*  
Academic Tech Coordinator/Teacher  
San Mateo, California

#### Schools Can Only Do So Much

Students have so many filters on the Web at school. Isn't it the parents' responsibility to watch out for their children while they are at home?

*Ana Resendez*  
Comment on ISTE's Facebook page

#### Safety First

About two weeks ago a student posted something on Facebook that is negative about a teacher and could have been taken as a threat, and she was disciplined by the school. It is becoming seemingly impossible for schools to avoid what is going on in the cyberworld, and it simply cannot be ignored. The students' safety is of the utmost importance, and if that means that schools have to monitor cyberbullying, there is no other option.

*Elizabeth Nostrant*  
Student Teacher  
Albany, Ohio

#### Limits of Liability

Let's assume that schools *should* be held responsible for cyberbullying that takes place after school hours on the student's home computer. By that reasoning, the schools should be held responsible if a student sells another student a defective product, or cheats at cards, or is involved in an accident in spite of taking driver's ed at school. Schools talk to students about the problems of cyberbullying for many reasons, the law being just one. But to hold the schools liable? Where does it end? It's nonsense!

*James Gates*  
Educational Technology Consultant  
Lemoyne, Pennsylvania

L&L wants your opinion! Send comments to [letters@iste.org](mailto:letters@iste.org). Participate in our reader poll at [www.iste.org/LL](http://www.iste.org/LL).



## Remember to Vote!

Voting in the ISTE Board Elections begins March 11 and will wrap up on April 11. Openings for two-year terms beginning in June include:

- One affiliate representative
- Three at-large representatives
- One computer science representative
- One corporate representative
- One international representative
- One PK-12 schools representative
- One state technology director representative

Visit [iste.org/elections](http://iste.org/elections) on March 11 for a list of candidates and ballot information. Show your support for educational technology and make ISTE a better organization by voting for new board members.



## Get Involved in Ed Tech Advocacy!



Join ed tech advocates in Washington, D.C., April 12-13 for a dynamic summit covering U.S. policy trends and their potential impact on schools, districts, and states.

The summit will feature key policy makers and meetings on Capitol Hill. It's hosted by ISTE, the Consortium for School Networking (CoSN), the State Educational Technology Directors Association, and the Software & Information Industry Association. To register online, go to [iste.org/store/sumdmit](http://iste.org/store/sumdmit).

Prior to the summit on April 12, ISTE will hold an ABC's of Advocacy workshop. Participants will develop a plan for effective ed tech advocacy, build a network of colleagues to call on for advice and support, and gain tools and resources to shape the future at state and federal levels.

Speaking of advocacy, if you want to keep up with policy activity in the U.S. capital, join the Elementary and Secondary Education Act Reauthorization Advisory Group. This group holds a monthly teleconference where Hilary Goldmann, ISTE's senior government affairs officer, shares updates on ed tech policy and grassroots activity.

To participate in the calls, contact Goldmann at [hgoldmann@iste.org](mailto:hgoldmann@iste.org).

## Meet ISTE's New Affiliate

ISTE welcomes the Instructional Technology Integration Partnership Ohio (iTip Ohio) as its newest affiliate. iTIP Ohio ([www.itipohio.org](http://www.itipohio.org)) is a group of five ed tech agencies that recently banded together but separately have been serving Ohio educators for more than 40 years.

iTip Ohio offers a full menu of professional development, networking, resources, and regional events for its members.

ISTE has nearly 80 affiliate organizations in six countries. Affiliates are autonomous, nonprofit, professional membership organizations that share ISTE's mission and function at a grassroots level to effect change in the field of educational technology. ISTE's Affiliate Network represents more than 100,000 educators and professionals ([iste.org/affiliates](http://iste.org/affiliates)).



By Michelle Mann

# Helping Students Express

Just a couple of years ago, Sam Kitondo was struggling to succeed at his London, England, high school. He was a spirited and outspoken teenager but had earned a reputation as a trouble-maker and was struggling to buck the gang stereotypes that plagued his community.

Then he got involved with Adobe Youth Voices (AYV), a global educational program sponsored by the Adobe Foundation, the philanthropic arm of software maker Adobe. The education-based initiative teaches underserved kids aged 13–18 how to use digital media to comment on their world, share ideas, and take action on the social issues that are important to them. The AYV mission is to help students “create with purpose” and spark a dialogue for change around the world by harnessing the energy and insight of young people.

Sam took this mission to heart. Under the guidance of his AYV-trained instructors, he produced a striking film called “What about the Families?” a psychological inquiry into the effects of prison life on the offenders’ families.

Today, Sam’s own life is headed in a completely new and exciting direction. As a direct result of the inspiration he found while working with AYV, he is now in his first year of a media and cultural studies degree at the University of East London. Through the program, he also became a protégé of

British Academy of Film and Television Arts (BAFTA) award-winning director Noel Clarke and hopes to have a cameo role in Clarke’s next feature film.

Sam wants to give back some of what he has gained as well. He develops and oversees media projects for hundreds of local kids as chairman of the Brixton Road Youth Centre, an

organization managed by young adults, and he leads a workshop on producing short films that tackle social issues. The students also may get the chance to screen their films on television. Sam’s passion for inspiring young people moved him to appeal to the mayor of London for more funding to help expand the youth center’s activities. He has expressed an interest in becoming an AYV educator and is putting a proposal together to implement the program at Brixton Road.



# Their Passion

Adobe's global philanthropic program, Adobe Youth Voices, gets to the root of the achievement gap by inspiring kids to actively engage in their own education with digital media technologies.

## Re-engaging Youth

Educators and policymakers worldwide are facing the same problem: figuring out how to improve the quality and impact of secondary education. So far, much of the public discussion has focused on measuring student achievement and teacher performance. But, at a time when so many students are struggling just to stay in school, the Adobe Foundation saw that the issue was even more fundamental than raising test scores. It has to do with student engagement. And one way to get kids interested in

education is to use something that already interests them—technology.

For years, Adobe has worked closely with educators and community organizations around the world to find out how technology can motivate and empower students to participate more actively in their own education. AYV and its partners are trying to achieve just that by helping educators use digital media to breathe new life into lessons about communication, team collaboration, narrative, analysis, and writing.

Of course, implementing a technology-based curriculum is only the starting

point. The program has also worked to help educators understand how to make what kids learn, and the way they learn it, more meaningful and useful. So far, AYV and its education partners are demonstrating that the right applications of technology can inspire students to develop new communication skills and actively engage at school and in their communities. And they are discovering that many students, like Sam, are not only changing the course of their lives, but also changing the world as a result. (See “Changing Lives around the World on pages 12–13.)

*Continued on page 14*



## Changing Lives around the World

Adobe Youth Voices has had a profound impact on the lives of students and educators around the world. Beyond digital literacy, the program is making a real difference by unlocking those exciting “ah-ha” moments when students discover their own voices and start to realize their own potential. Here are just a few examples of inspiring projects that participants have completed.

High school students in Redwood City, California, created “Make it Right,” a music video that addresses problems they experience daily in their community. “We came up with the song because we were at the stage in our lives where we wanted our voices to be heard,” explains Victor Rosas, one of the video’s creators. “Once it was out there, it opened up our futures.”

Kyle Ames, a 17-year-old from San Jose, California, created a public service animation titled “Don’t Spread the Hate,” which conveys the sadness and futility of discrimination. AYV gave Ames and other youth a forum where they could discuss important topics and openly share their views, which fostered an environment that promoted learning and increased understanding.

Students at Newcomers High School, a school for recent immigrants in New York, created “No More Silence,” a video about the domestic abuse of undocumented immigrants. As part of the school’s integrated approach, the video’s creators were invited into other classes to lead discussions, furthering the reach of the lessons learned when they created the video.

“I’ve learned to have more dedication, not only in my schoolwork or projects, but in life.” (age 17, United States)

“I learned how to express myself in ways that people would and could listen to, see, and understand.” (age 16, Canada)

“How to channel my ideas into a high-quality piece of media that represents who I am and what my ideas are.” (age 18, United Kingdom)

### By the Numbers

An independent team of professional researchers from the Education Development Center annually evaluates the Adobe Youth Voices program’s worldwide impact from the perspective of both educators and youth participants. The evaluation focuses on student engagement and development of digital age skills. The results contribute to the ongoing development and growth of AYV and help the program reach and positively affect more young people each year. Results from the 2009–10 program year indicate:

97% reported they were encouraged to be creative.

93% of participants report that they are interested in continuing their education after high school.

90% of youth reported that they tried their best on their AYV projects.

**Kayf Abdulqadir, an 18-year-old from Canada**, says that AYV has helped her speak up about how the hijab, the head covering traditionally worn by Muslim women, is portrayed in the media. Through her team's video, "Fabric: The Unveiled Truth," she gained the confidence to share her perspective on a sensitive issue and learned the value of teamwork, all while building invaluable technical skills.

**A team of young AYV filmmakers in South Africa** captured the hardships that mothers face raising children alone in the township where they live. While highlighting the families, the filmmakers also celebrated each mother's resilience in overcoming the struggles of daily life. Throughout the process, the students used their newly developed storytelling and technology skills to weave together a compelling piece that called for action in their communities. This short film was selected as part of Youth Producing Change, the first exclusively student-produced program of short films at the Human Rights Watch International Film Festival.

**Ruh al-'Alam, an AYV educator from London, England**, teaches a group of deaf students who are creating a series of new media artwork that will challenge preconceptions of deafness and reach a global audience. What is truly amazing about the project is that it enables others to "hear" deaf people through the visuals they produce. Introducing these students to new creative technologies and processes opens up a world of potential. Working on their own and in teams with teachers and mentors, the students engage in interactive discussions and storyboarding, then use imaging, video, and audio technologies to capture and communicate their work. Whenever possible, they go out into their communities, interview peers and community experts, and, along the way, capture real-world footage and images that they can work into the final project. "What matters is what and how they express themselves," says al-'Alam. "It's the beauty of hearing their voices and stories as well as helping bring them to life."



"I learned how to make videos and gain much more confidence in interacting with other people." (age 13, Uganda)

"I have learned how to take initiative on issues that affect us." (age 17, India)

"I learned a lot of things—that I have the right to be heard. Using media is another form to get my voice out there." (age 16, New Zealand)

**89%** of educators reported that their students expressed interest and enthusiasm about the topics of their media projects.

**87%** believe that, as a result of AYV, their opinions on issues they care about matter.

**87%** report that they were expected to make high-quality media.

**86%** report that they can influence others with their ideas.

**80%** reported that the things they are learning through AYV are important to their lives.

**79%** of youth improved their abilities to work in a group setting to solve problems.

## Working Together

AYV teaches young people how to work with both teachers and fellow students to create videos, animations, photo essays, presentations, music, and other media projects on the topics they are interested in. By fostering this type of collaborative learning environment and creative expression, AYV is helping educators develop forward-thinking lesson plans that get students excited and involved while teaching creative media technologies that promote digital literacy.

Some might question whether making videos or other digital media projects can really make a difference in young people's education and development. But research has shown that 93% of AYV kids planned to continue their education after high school. Although this can't be attributed solely to the program, the statistic is telling, as the schools and communities that qualify for the program traditionally have few resources.

The program provides software, teacher training, mentoring, online collaboration tools, education materials, and curricula. It also produces or supports exhibitions that give students a public forum to share their perspectives with a broader audience. The students who participate in these public screening events reach a level of personal achievement and fulfillment that they rarely experience in the classroom. By sharing their perspectives through creative projects of their own making, students are able to find their own voices and apply their newfound confidence to other academic and life challenges.

By sharing their perspectives through creative projects of their own making, students are able to find their own voices and apply their newfound confidence to other academic and life challenges.

In the AYV model, all students are encouraged to participate, and the teacher's role evolves from an information presenter to a facilitator of student-generated knowledge. Educators participating in AYV say they are now more aware of what young people value and care about, and they have begun basing more assignments on topics that really resonate with them. This shift is essential in helping students connect the skills they learn in school with their own life experiences. It also broadens student awareness of topical issues as they discuss and view the work their peers create.

While the students work on projects to share with local and global audiences, they also build valuable skills that can open doors to future success. The results are frequently transformative, as they develop creativity, communication, and collaboration skills that are essential for success in today's global workforce.

## Getting Involved

The Adobe Foundation issues AYV grants through a request-for-proposals process to both governmental and non-governmental education organizations. These organizations are best informed and situated to select the local schools and programs that would most benefit from being part of AYV. Adobe then donates to the selected schools software, grants for production equipment,

teacher training, and ongoing support. It also offers them the opportunity to submit student work to festivals and events.

The rich teacher training component of the program gives educators a theory and approach to youth media, an introduction to Adobe tools, and hands-on experience making media in the form of either a video or graphic design project. The mentors responsible for training the teachers are experienced media artists who provide ongoing coaching. And as the teachers advance their skills over time through their work with AYV, they also learn how to teach courses on technology-based subjects such as animation, graphic design, and motion graphics.

For schools not in the AYV network, the Adobe Foundation has also launched Adobe Youth Voices Essentials (<http://essentials.youthvoices.adobe.com>), a set of curricula and resources that are free for download to help busy teachers create engaging new learning experiences for students. Crafted by digital media experts and trainers, Essentials includes step-by-step lesson plans and activities for print, video, photography, and animation to help educators launch, guide, and sustain effective youth media programs. Each curriculum provides valuable lessons that not only strengthen media-making skills, but also encourage critical thinking. Students are asked to consider the world around them and how they would create change through their own writing, collaborating, and critiquing. The lesson plans focus on youth-centered instruction, media production, and strategies for exhibition and distribution. Essentials also provides real-world examples of the media projects the young people

To learn more about the program and see the work Adobe Youth Voices students are producing, check out these sites:

Website: <http://youthvoices.adobe.com>

Facebook: [www.facebook.com/#!/adobeyouthvoices](http://www.facebook.com/#!/adobeyouthvoices)

Twitter: <http://twitter.com/adobeyv>

YouTube: [www.youtube.com/user/adobeyouthvoices](http://www.youtube.com/user/adobeyouthvoices)



While the students work on projects to share with local and global audiences, they also **build valuable skills** that can open doors to future success.

in the program have created to serve as inspiration for other students.

### Extending the Program's Reach

Since its inception in 2006, AYV has engaged more than 64,000 youth and 3,000 educators from 45 countries in its programs to develop original, thought-provoking content on a wide range of issues, including bullying, domestic violence, climate change, poverty, eating disorders, and the impacts of war. The program aims to reach more than 7,000 educators and 150,000 youth by the end of this year.

One way it strives to do that is through partnerships. AYV has joined forces with, and offered grants to, companies and organizations that have aligned philanthropic goals,

a focus on visual and multimedia art, and/or a mission to use or teach design as a tool to address social issues. Recent partners include the Black Eyed Peas Peapod Foundation, the PBS Foundation, and the Intel Computer Clubhouse Network. These partnerships are an effective method of extending the program's network, which allows it to reach more people in more areas.

Student media projects from AYV have also been showcased at such prestigious venues as the Human Rights Watch International Film Festival, the Sundance Film Festival, and dozens of community events across the world. The exposure the projects receive allows the students to see the real-world effects their work can have

on others, and it creates a snowball effect as the program gains momentum and more people become aware of it.

Today, education is as important as ever in contributing to individual and global well-being. A focus on giving students more opportunities to learn and expand their skills is essential for success in today's global markets. There is ample reason to be optimistic. Many positive, technology-based initiatives, such as AYV, are showing how education can evolve to reach more young people like Sam Kitondo, engage them, and send them on their way to more successful, fulfilling lives.



*Michelle Mann has been the executive director of the Adobe Foundation for nearly seven years.*

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# Not Your Grandmother's Library!



Learn how tech-savvy librarians are blazing a path to student success in the digital age.

Some schools sport professionally staffed, state-of-the-art libraries that serve as centers of inquiry where students master technology and develop information literacy skills. Others languish with industrial age facilities designed for 20<sup>th</sup> century learning, or worse yet, they have no libraries at all.

Fortunately, thousands of school librarians in recent years have acquired the skills they need to help students and teachers fully embrace the benefits that a modern library offers.

## Keys to Success

School libraries are an essential part of a complete school program. They provide an equitable, fiscally responsible strategy for sharing resources across grade levels and the curriculum while addressing core reading, information, and technology literacies.

Let's face it, students are still voracious readers of books in print, and now they consume a variety of electronic formats. This makes having a digital age library more important than ever. At no other time in history have students needed such pronounced information literacy to effectively navigate and use vast amounts of information. The following examples highlight the work of a handful of savvy librarians who are leveraging technology to prepare students for a successful future.

SIGMS provides many opportunities to get involved, including contributing to the SIG's newsletter; helping to organize professional development activities, such as webinar or book discussions; or simply attending events in Second Life and sharing your views and experiences with others. For more information, visit [www.iste.org/sigms](http://www.iste.org/sigms).

ISTE's Special Interest Group for Media Specialists (SIGMS) provides a community for school library media specialists to gather and learn about technologies that improve the operation and programs of the school library media center, increase access to information, and create a more effective and efficient teaching and learning environment.

By Lisa Perez

## Inquiry-Based Instruction

Joyce Valenza writes an award-winning blog for *School Library Journal* called The Neverending Search. The title is also descriptive of her library program at Springfield Township High School in Erdenheim, Pennsylvania, where she seeks to identify the latest technologies and resources to support her students' information needs and creativity.

Springfield Township High School serves more than 700 students in grades 8–12. The middle-class suburban high school, located outside Philadelphia, offers an array of AP and honors classes. More than 90% of students are college bound. Springfield's inquiry-based instructional model makes access to a robust library program vital.

The Springfield Township Library encourages student learning with spaces for individual work, production, group collaboration, and presentation. Technology is readily accessible; the library provides more than 80 desktop computers and various multimedia production tools. Students

## Tech Infusion

Wendy Stephens, the librarian at Buckhorn High School in New Market, Alabama, is preparing her students for technological advances that we can now only imagine. She believes "that the searching and information evaluation skills our students learn in school will underpin all sorts of future information landscapes." Stephens' infusion of technology in her library program does much to prepare her students for that future. She is certified by the National Board for Professional Teaching Standards, received the Chiquita Marbury Award for Technology Innovation in 2009, and is a Google Certified Teacher, among other honors.

About 1,300 students attend Buckhorn from nearby rural and suburban communities. The student body is about 32% minority, and 23% receive free or reduced-price lunch. Stephens describes the library as contemporary and spacious, with panoramic views, vaulted ceilings, and skylights. The library has 14 computers,

also bring laptops to access the library's wireless network. Two part-time library assistants and volunteers help Valenza keep the library actively serving students.

U.S. history students recently engaged in a project to help them develop empathy and a better understanding of the Great Depression. They used primary source documents and online analysis tools from the Library of Congress to examine photographs of the era. To develop deeper contextual knowledge, they explored resources that Valenza vetted and compiled in a companion electronic pathfinder. This crosscurricular project also involved language arts components in which students created "found poems" that integrate lines and phrases from existing text and remixed them with the students' own language. The assessment artifacts were digital VoiceThread stories and an online anthology of their found poems, which debuted during film-festival and

live museum experiences. Valenza used a wiki to house all aspects of the project (see Resources on page 19).

In another project called Hamlet Remixed, English honors students prepared personal interpretations of selected passages of Shakespeare's *Hamlet*. Using *The Oxford English Dictionary*, they studied the pronunciations and meanings of the passages and developed an interpretive analysis of the selections. Valenza advised them about copyright law and properly citing resources. Students viewed YouTube videos to see how professional Shakespearean companies have produced and performed the passages. Next, students located Creative Commons images that reflected the meaning and mood of their passages and used these to create VoiceThreads with their own voice narrations.

"It is the most exciting time to be a teacher librarian," Valenza says. "In the past three years, the information and communication landscapes have shifted entirely, making continual retooling a professional essential."



The goal of Hamlet Remixed is to achieve a deeper appreciation for Shakespeare's language and literary craft, for the story of Hamlet, and for the characterization of a famous figure in theatrical and literary history.



This image is from a wiki page titled Rami's notebook and is one example students used for Stephens' activity on war-time propaganda posters. Students choose a poster, describe its purpose, identify its author and intended audience, then share their opinions about the poster's message.

several laptops, and digital and video cameras. Approximately 14,000 volumes make up the collection of books. A paraprofessional also works in the library. The school's administration has a strong track record of supporting the library in the allocation of the school's technology resources.

For an elective class on the "great wars," Stephens developed an activity that involves looking at wartime propaganda posters. Students used wikis as digital notebooks to collect images, research the iconography behind the posters, and provide commentary on each poster. Stephens said that teachers appreciate the facilitated assessment process when they find each student's artifacts conveniently located on wikis.

Stephens enjoys helping teachers find the right digital tools to meet their needs. An English teacher shared with Stephens that she wanted her students to reflect their reading in a nonprint format.

Stephens suggested that the students create podcasts using their cell phones. She also pointed out that by using an RSS feed, the teacher could listen to all of the student podcasts at her desk. Wendy worked with the students in the library to set up Gcast accounts (see iLike in Resources on page 19) and showed them how to record the podcasts. It's no surprise that many students completed their assignment that very night.

Stephens credits the collaborative nature of her colleagues as a key to the success of her library program, and her advocacy for the use of ed tech helps foster those relationships. "Knowing that I will be willing to provide a safety net for the technical aspects definitely allows members of our faculty to take more technological risks with their instruction, assignments, and assessment. I think there are lots of librarians out there willing to support the same types of projects."



## Empowered Learning

Most charter schools are hard pressed to fund professionally staffed libraries, but Monarch Academy, part of the Aspire Charter Schools network, had the foresight to do just that. Keisa Williams has been Monarch's librarian for the past five years. She is always trying new things to keep her program relevant to students, and her use of technology plays a big role in her success. Monarch Academy received the prestigious National Distinguished Title I School Recognition Program Award in 2008—an award that recognizes marked, sustained academic improvement in schools serving high-poverty areas. A strong school library program is part of the recipe for that success.

Monarch Academy serves about 350 students in grades K–5 in Oakland, California. The school population is 97% Latino students of Mexican heritage and 3% African-American. Ninety-seven percent of the students are low income. The library operates on a fixed schedule in which Williams sees classes while the teachers have their preparation periods. This doesn't stop her from providing a strong, curriculum-based program that



This illustration from Maria's Boxing Movie is one of many images that Aspire Public Schools students created and brought to life as part of the Streetside Stories project.

heavily infuses technology. Her one-room library has three areas: a computer center, a seating area, and a storytelling area. It houses a cart of 24 computers, a whiteboard, and listening centers in addition to a collection of about 7,000 print titles.

Monarch's fourth and fifth grade students recently participated in a digital storytelling project called Streetside Stories, part of the Teacher's Edge program funded by the U.S. Department of Education. The library played an integral role in

Streetside Stories is a San Francisco-based literacy arts nonprofit that helps students share their life stories, connect with the arts, and improve their literacy skills through the power of storytelling.



## Getting Connected

Why are those kids wearing long sleeves and sweatshirts? That was the question that fourth grade Arizona students asked their teacher when they were on a Skype call with students at Horace Mann Elementary School in West Allis, Wisconsin. This real-life observation led to a conversation about variations in climate—one of many interesting discussions initiated by Skype calls that Mann librarian Chad Lehman facilitated with his students and others from around the United States, as part of his class geographical research.

Technology is evident throughout the library and in the adjoining computer lab. Together, both spaces provide 35 desktop computers for a school of about 400 students in grades PK–5. Libraries in Wisconsin are not subject to the severe funding shortfalls common in other states, thanks to the Common School Fund, a type of public education financing established by the Wisconsin Constitution to ensure a consistent budget to help maintain quality libraries for its students (see Resources).

Lehman's students seamlessly move from print to electronic resources. A robust collection of 15,000 print items and audiobooks serves as a springboard for many technology-based learning experiences. Recently, a classroom teacher read the book *The Squiggle* by Carole Lexa Schaefer. Grade 1 students followed up in the library by interpreting squiggle lines in Kid Pix software to create various fanciful electronic drawings. They used the pictures to create VoiceThread digital stories, which allowed students to create verbal descriptions of their artwork.

In another project, grade 5 students began the year by writing goals for themselves in class. At the library, Lehman taught the students how to import digital photos. Next, students uploaded their photos to a magazine cover generator app at the Big Huge Labs website and added their goals as "articles" on the covers. Students printed and proudly displayed the covers outside of their classrooms.

Prior to becoming a school librarian, Lehman worked for eight years as a third grade teacher.



This electronic drawing, created by a grade 1 student at Mann Elementary, began as a single black squiggle in Kid Pix software. This image and others produced by the class provided original artwork for digital stories created by students using the library's media tools.

When asked why he made a career move, he said, "I wanted to do more with technology, and I knew that the school librarians in my district worked with technology a lot."

the program's success. Williams spent the year co-teaching with classroom teachers and a media coach to engage students in a crosscurricular movie-making project that combined script writing, oral expression, student artwork, and technology skills to create movies that tell each child's personal story. The students made the movies using a MacBook mobile lab, iMovie, and GarageBand software.

Williams' primary-grade students have also made several digital stories as part of Monarch's CARES program. CARES, which stands for cooperation, assertiveness, responsibility, empathy, and self-control, uses literature to promote a culture of caring and responsibility. Students created a VoiceThread based on the book *Wangari's Trees of Peace*. They also created a video of a puppet show based on a story inspired by the book *The Librarian of Basra: A True Story from Iraq* (see Resources).

Williams' students use technology to help each other too. Using the website Screencast-o-matic, students have created short instructional videos to explain common technology-related vocabulary terms. Williams uses technology extensively to help support learning at Monarch. Her electronic

pathfinders provide links to information about resources on specific topics, such as dictionaries. Students learn important information literacy skills by using a Glogster poster that points to important resources and by visiting online learning centers that provide game-like educational experiences.

Williams knows that many of her students do not have access to computers outside of school, so she makes sure they get the most out of the technology during their school day. "I have six years to make an impact on the life of one student. What I do in the library matters," she says.

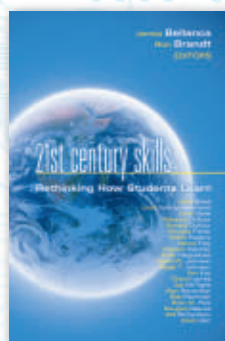
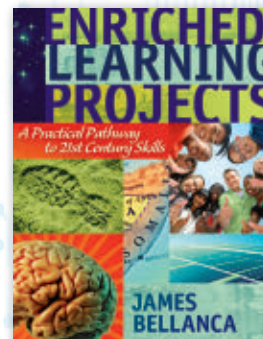
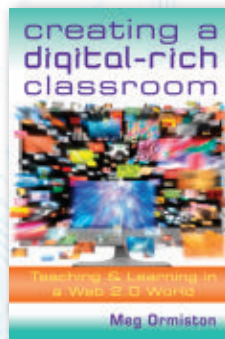
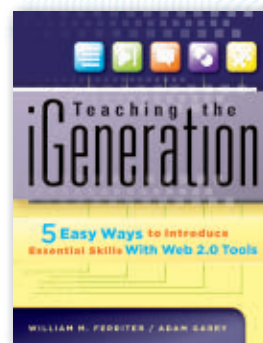
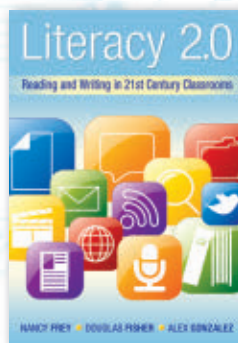
## Resources

Big Huge Labs: <http://bighugelabs.com/magazine.php>  
 Common School Fund: <http://tinyurl.com/4mfzxe7>  
 Great Depression wiki: <http://tinyurl.com/4n7wzq2>  
 Hamlet Remixed: <http://hamletremixed.wikispaces.com>  
 iLike: [www.ilike.com/garageband](http://www.ilike.com/garageband)  
 Monarch Academy: <http://tinyurl.com/4jb3s2d>  
 Monarch Academy CARES program: <http://tinyurl.com/479m8l9>  
 Monarch Academy tech terms wiki: <http://tinyurl.com/yfxa68k>  
 School Library Journal blog: <http://tinyurl.com/2effolt>  
 Screencast-O-Matic: [www.screencast-o-matic.com](http://www.screencast-o-matic.com)  
 Streetside Stories: [www.streetside.org/programs/digital-teachers.htm](http://www.streetside.org/programs/digital-teachers.htm)



Lisa Perez is an area library coordinator for the Chicago Public Schools Department of Libraries. She is also chair of ISTE's Special Interest Group for Media Specialists.

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The National Science Foundation has assembled a group of thought leaders to bring the concepts of computational thinking to the K-12 classroom.

Wing's article gave rise to an often controversial discussion and debate among computer scientists, cognitive researchers, and educators regarding the nature, definition, and application of CT. While many people have

From that meeting a consensus emerged regarding the essential elements of CT, its importance as a learning objective for all students, and how it might be introduced into the PK–12 educational

environment. The outcomes of the meeting were summarized and synthesized into a tentative “operational definition” of CT—that is, a description of its components that educators can use to build CT skills across the curriculum through all grade levels and content areas.






[illegible]

- Formulating problems in a way that enables us to use a computer and other tools to help solve them
- Logically organizing and analyzing data
- Representing data through abstractions, such as models and simulations
- Automating solutions through algorithmic thinking (a series of ordered steps)
- Identifying, analyzing, and implementing possible solutions with the goal of achieving the most efficient and effective combination of steps and resources
- Generalizing and transferring this problem-solving process to a wide variety of problems

- Confidence in dealing with complexity
- Persistence in working with difficult problems
- Tolerance for ambiguity
- The ability to deal with open-ended problems
- The ability to communicate and work with others to achieve a common goal or solution



To learn more about how to teach the concepts and vocabulary of computational thinking in PK–12 classrooms, please visit [iste.org/computational-thinking](http://iste.org/computational-thinking) or the CSTA website at <http://csta.acm.org>. Check back in a few months to find curriculum resources, vocabulary tools, and a toolkit for leaders.



developing examples of what CT skills look like in the classroom as well as assembling resources to support and guide the implementation of computational thinking concepts in PK–12 education.

### How Is CT Different?

Many of the concepts, skills, and dispositions listed in this operational definition are not new. So how is computational thinking different from critical thinking or mathematical thinking?

This question has given rise to much debate but, as yet, no widely accepted consensus. The participants in the workshops sponsored by the ISTE/CSTA project proposed that CT differs from critical thinking and mathematical thinking because:

## Computational Thinking in the Classroom

Here are some scenarios, developed by participants in the ISTE/CSTA practitioners workshop, that illustrate how computational thinking concepts and skills play out in various grade levels and disciplines.

In these examples, students are learning computational thinking skills in nontraditional settings so that they become internalized and can be easily transferred from one setting to another. These students are developing skills that can be applied in a variety of situations—in other classes, in the workplace, in their hobbies—from a variety of perspectives and in an authentic setting. As more and more teachers emphasize these skills, students will begin to apply them naturally in new and exciting ways.

**Ms. Martinez's sixth grade social studies class is studying the Roman Empire.** Students will

compare events in an ancient Roman child's life to their own life experience by writing responses on the Ancient Roman Life Blog. They will also identify the lifestyle of ancient Roman children and compare it to their own. The teacher calls attention to the vocabulary of "modeling" and "simulation" and asks students to reflect on other activities in which they have used these concepts and skills. She also asks them to reflect on where they might use them in the future, including their careers. These students are learning the computational thinking concepts of representing data through abstractions, such as models and simulation, and logically organizing and analyzing data. They are also exploring ways of transferring these skills to other contexts.



**Ms. Lee's seventh grade class is looking at a series of diagrams her students have created to portray floor plans of their school and homes.**

In the diagrams, each room is labeled as a node and each pathway out of the building is labeled as a route. Students are discussing the options for escape routes in the event of a fire. As the students and Ms. Lee look over the diagrams, you hear a conversation among the students describing how the diagrams are an abstraction of the actual rooms in a home or school building that enables them to represent all the possible escape routes. The students are preparing to create an algorithm to calculate the safest and fastest routes from the buildings.



**Mr. Butler's fifth grade music class has been studying the diatonic scale and the concept of pitch.** Now

the students are using Scratch to create a virtual xylophone that will correctly reproduce the scale. Through observation, the students recognize that each bar of the xylophone behaves in the same manner, but the pitch varies for each bar. These students are learning the CT concepts of representing data through abstractions as well as identifying, analyzing, and implementing possible solutions. Additionally, they are experiencing the CT disposition of persistence in working with difficult problems.



**Mr. Davis' ninth grade language arts class is studying various literary elements, such as plot, point of view, irony, and voice.**

They have read a number of short stories and are wrapping up the unit. They are preparing to write essays that explore how a particular literary device plays a part in the essence and workings of the chosen stories. These students must state their theses clearly and include at least three pieces of evidence to support the theses. The skills of logically organizing and analyzing data necessary for proving a thesis with citations of strong and thorough textual evidence are also essential elements of computational thinking. The CT concept of representing data through abstractions of literary elements, such as plot structure, setting, figurative language, tone, and point of view, is also necessary to writing a coherent essay of literary analysis with a clear thesis statement. The CT ability to communicate and work with others to achieve a common goal or solution facilitates active participation in class discussions, especially those guided by a seminar question. As the students reflect on their unit and the skills that enable them to be effective writers, they begin making connections between the skills they are using in language arts and their application to other subject areas.

- It is a unique combination of thinking skills that, when used together, provide the basis of a new and powerful form of problem solving.
- It is more tool oriented.
- It makes use of familiar problem-solving skills such as trial and error, iteration, and even guessing in contexts where they were previously impractical but which are now possible because they can be automated and implemented at much higher speeds.

### Why Is CT Important?

The application of computer technology to virtually every field of study has changed the way work is done today. While the human mind is by far the most powerful problem-solving tool we have, the ability to extend the power of human thought with computers and other digital tools has become an essential part of our everyday lives and work. We all need to understand

how, when, and where computers and other digital tools can help us solve problems, and we all need to know how to communicate with others who can assist us with computer-supported solutions.

Students already learn many elements of the set of computational thinking skills in a variety of disciplines, but we need to ensure that all students have the opportunity to learn the complete set of skills so their combined power is available to them. The NSF/ISTE/CSTA project has explored how students learn computational thinking at all grade levels and in all disciplines. The long-term goal is to recommend ways that all students have the opportunity to learn these skills and to ensure that they can be transferred to different problems and used in different contexts.



*David Barr is a retired K-12 teacher and administrator who works as an educational technology consultant. He serves on the ISTE NETS Leadership Team and the steering committee of the NSF/ISTE/CSTA*

*Computational Thinking project.*



*John Harrison has taught mathematics and computer science at Princess Anne High School in Virginia Beach, Virginia, since 1999. He sits on the Computer Science Teachers Association board and chairs its communi-*

*cations committee.*



*Leslie Conery is deputy CEO of ISTE. She holds an assortment of degrees and certifications in computer science, education, and association management. She has also been a classroom teacher at the elementary and high school levels and a professional development specialist.*

.....  
This material is based on work supported by the National Science Foundation grant CNS-1030054.

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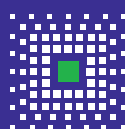
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# LEARNINGconnections

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By Kevin M. Oliver and John K. Lee

## Exploring History in Plantation Letters

Despite decades of scholarly investigation into the Antebellum South, teachers have few materials to help their students understand what life was like for enslaved people and, to a lesser extent, what life was like for other marginalized people of the era, including women and children. Literature and history textbooks give short shrift to these stories.

A collaborative project led by education faculty at North Carolina State University involves digitizing and making accessible for the first time primary sources that can inform students about the community experiences of African-American slaves and other marginalized persons living on multiple plantations owned by the Cameron family of North Carolina.

### Cameron Family Papers

The UNC Libraries Manuscripts Department maintains an extensive collection of more than 35,000 documents in their undigitized Cameron family papers. The Cameron family regularly communicated by post with their family, friends, and business associates (overseers, tradespeople, and merchants) regarding their extensive plantation operations in three southern states: Alabama, Mississippi, and North Carolina. The level of detail provided in their personal communication provides a rich context for the study of Antebellum plantation life in the southern United States.

A small portion of letters from the Cameron family papers that specifically address what life was like on Antebellum plantations for enslaved



Bennehan House on the Stagville Plantation, where many of the Cameron family letters were written.



This sample Google Map with embedded place markers depicts the various modes of transportation discussed in two letters about a journey from North Carolina to the Cameron family plantation along the Mississippi Delta.

people has been made accessible to students and educators through a website called the Plantation Letters. To date, more than 100 letters have been digitized and tagged. The site includes an interactive document viewer that allows users to browse within or across topics to retrieve relevant letters of interest. Sample topics include childbirth, doctors, medicines, clothing, customs, food, housing, workload, jobs, machinery, crops, and transportation. Several themes emerged in the process of

organizing the letters that allow for more extensive inquiry, including values of the period, slave community and resistance, transportation and travel, health and disease, life on the plantation, daily operations, and agriculture.

The document viewer allows users to see both a photograph of the original letter and a transcribed copy for easier reading. Students can download copies of letters from the site, and teachers can use the embed source code to post letters on blogs or other websites



## Social Studies

The Plantation Letters Ning offers user-contributed lesson plans and student inquiries and discussions.



This rare two-story slave quarters is located on the Stagville Plantation.



in support of reflection and interpretation activities. A Ning is also available that allows teachers access to existing lesson plans. Educators who join the Ning can contribute new lessons and view the work of graduate students researching the letters.

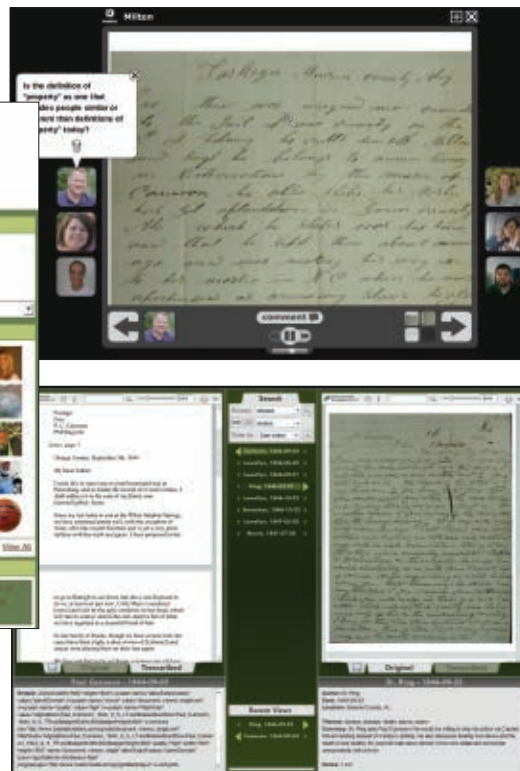
### Historical Inquiry

The goal of this project is to enable students to conduct historical inquiries on a variety of topics using contemporary tools. The practices of teaching and learning history have undergone significant developments in the past 30 years as research on historical thinking and technological advances have improved teaching practices. One thing we have learned from this research is that students should be

analyzing and thinking about history using well-researched frameworks and scaffolds.

### Benchmarks and Scaffolds

The Plantation Letters Ning includes lesson plans and teacher-generated products that are aligned with some of these benchmarks and scaffolds, including the Benchmarks of Historical Thinking and the SCIM-C scaffolded historical thinking heuristic. The Benchmarks of Historical Thinking are designed to help teachers use standards for promoting and assessing students' historical thinking in six core areas: establishing historical significance, using primary source evidence, identifying continuity and change, analyzing cause and consequence, taking historical perspectives, and understanding moral dimensions



This sample VoiceThread page contains an embedded letter and student reflections.

The document viewer on the Plantation Letters website illustrates the ability to view two letters simultaneously in either the original or transcribed format.

of history. The SCIM-C model is an approach to helping students correctly interpret historical primary resources in five phases:

- Summarizing
- Contextualizing
- Inferring
- Monitoring
- Corroborating

You can view models of inquiry we have conducted with inservice and preservice teachers on our Ning. You'll find podcasts created by a group of social studies graduate students that illustrate SCIM-C research. Or read articles about slave health from a group of instructional technology graduate students who took part in a cognitive flexibility exercise comparing conditions contributing to modern-day health crises to health-related conditions on plantations.



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Students can merge their own reflections with recorded excerpts from texts to create a podcast of annotated oral histories and share them online.

### Primary Source Documents

Through the project, we also aim to model uses of innovative and productive technology tools in support of historical inquiry. A host of Web 2.0 tools have emerged in the past four to five years that help students manipulate information from historical primary-source documents in a manner consistent with standards and frameworks.

For example, the Benchmarks of Historical Thinking suggest that students should learn to use primary-source evidence. Two lessons developed for the project engage students in using Google Maps to reconstruct common transportation routes detailed in several letters.

The benchmarks also suggest that students learn to understand the moral dimensions of history, so another lesson developed for the project leads students to use wikis or Google Docs to write their own piece of historical fiction about a group of slaves who were relocated from North Carolina to Alabama on foot. In this lesson, student groups write a daily diary from the perspective of slaves, describing the forced march based on facts gleaned from overseer/owner letters.

To reflect again on the moral dimensions of history as well as cause and consequence for slaves, another lesson requires students to use collaborative document annotation tools, such as VoiceThread, to discuss letters from overseers and jailers communicating about a slave named Milton, who ran away from a Cameron plantation in Alabama and was caught and eventually punished by whipping.

Aligning technology with standards and frameworks is not limited to Web-based tools. Digital audio and video tools can encourage historical

thinking about documents. This project is fortunate to have a partner in the local Stagville state historic site, the location of the Cameron family home, where many of the primary source documents were written.

Students can visit the site and create digital documentaries using the historical documents in their research. Or students could use audio recorders during visits to make reflections or inferences about selected texts based on the visible context of the site. At their schools, students can merge their own reflections with recorded excerpts from texts to create a podcast of annotated oral histories and share them online.

Please join the more than 1,300 unique visitors from 60 countries who have visited the Plantation Letters site over the past two years to learn how this new resource might benefit your students as they inquire into 19<sup>th</sup> century American history.

### Resources

Benchmarks of Historical Thinking: [www.histori.ca/benchmarks](http://www.histori.ca/benchmarks)

Plantation Letters Ning: <http://plantation.ning.com>

Plantation Letters website: <http://plantationletters.com>

SCIM-C model: [www.historicalinquiry.com](http://www.historicalinquiry.com)

VoiceThread: <http://voicethread.com>



Kevin M. Oliver is an assistant professor of instructional technology at North Carolina State University in Raleigh. He has a PhD from the University of Georgia.



John K. Lee is an associate professor of social studies education at North Carolina State University in Raleigh. He has a PhD from the University of Virginia.

## Tip

## Not a Programmer? Use Google Sites

**Problem:** I want to have a website so my students can access classroom content anytime, anywhere, but I don't have time to learn programming or funding for software.

**Here's a solution:** Google Sites provides teachers with an easy way to build their own classroom website. Google Sites does not require any programming language, as it is built with a WYSIWYG (what you see is what you get) editor. You will be able to easily integrate other Google Apps (Docs, Calendar, Maps, etc.) and bring in other embedded content from the Web.

As the site creator, you can choose to collaborate with your students on your classroom site or simply choose to give them viewing rights only. Either way, you will be able to easily upload classroom content to extend student learning beyond the walls of your building. Want to learn more about Google Sites? Check out Google's online training center for educators ([edutrainig.googleapps.com](http://edutrainig.googleapps.com)).



*Andy Crozier is the coordinator of digital learning technology at Grant Wood Area Education Agency in Cedar Rapids, Iowa. He is a Google Certified Teacher, Google Apps Certified Trainer, and Apple Distinguished Educator.*



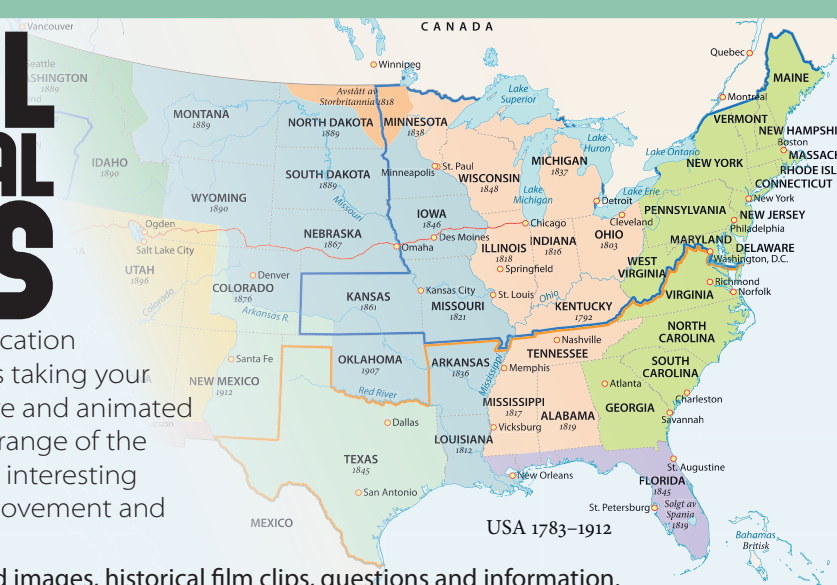
If you have a tip to share, post it on the comment wall on the L&L group page of the ISTE Community Ning at [www.iste-community.org/group/landl](http://www.iste-community.org/group/landl) or e-mail it to [dfingal@iste.org](mailto:dfingal@iste.org).

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# A Guide to Tagging

Perhaps Google CEO Eric Schmidt said it best: “Every two days we create as much information as we did from the dawn of time until 2003.” New ideas and new tools surround us. But if we are to benefit from that vast amount of information, we must gain control of it so that we don’t get swept up by the fast-moving flow. It is easy for a teacher to take one look and decide never to jump in. But it is critical for educators to learn how to survive within this river of information without drowning.

One way to handle the flow is to learn to tag—the process of identifying the information you want from sites and articles. Tagging allows you to create your own organizational system for the influx of ideas. By tagging, we become the stewards of our learning and growth.

## Creating a Tag

A tag is a personal note that identifies what you think is important about the article, site, or activity. Tagging is like creating your own personal library. No longer do books need to live on one shelf with one call number. You can give an article or website as many tags as you want. In fact, the more the better.

Diigo is a social bookmarking site that allows you to easily save sites to your library. Within your library, you can create lists, which are folders for specific topics that are of interest to you. When you find an article or site that you want to remember, you create a tag and add it to a list. Each tag you create reflects your ideas about an article or site. When you need to find a website that you found a year or more ago, you simply use the tags to find it in the library.

## Identifying Categories

To build an effective list of categories for your tags, start big. You want a lot of topics and subtopics so that you can easily search your library. Each time you tag a site, add as many tags as possible to help you find it again. Here are some of the questions that I ask myself:

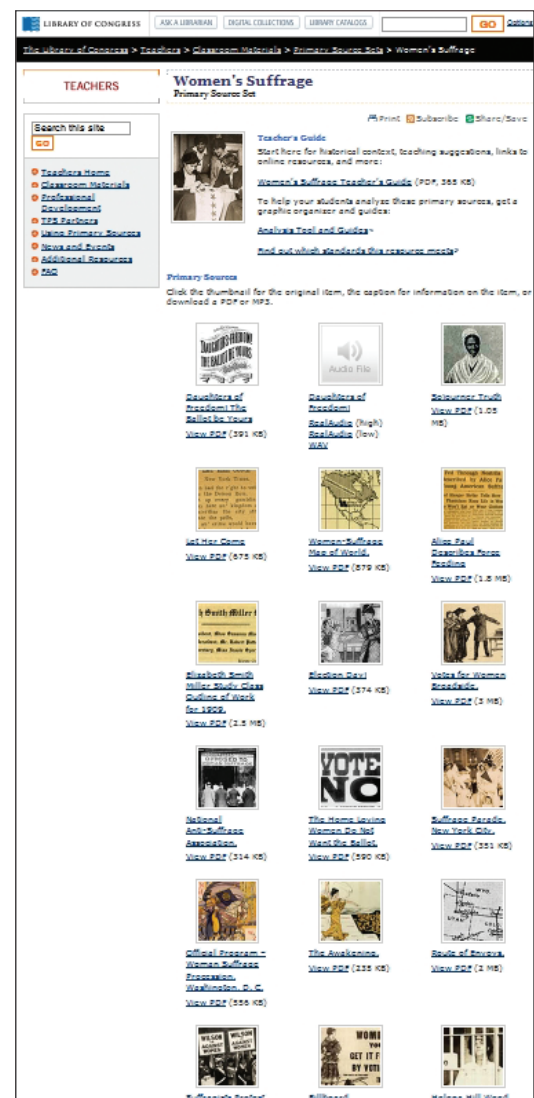
- Is the site for home or school?
- What is the skill that can be learned?
- What kind of tool is it?
- In which trimester will I use it?

Here are my tags for the Library of Congress’ primary-source set on women’s suffrage ([www.loc.gov/teachers/classroommaterials/primarysourcesets/womens-suffrage](http://www.loc.gov/teachers/classroommaterials/primarysourcesets/womens-suffrage)):

- School
- History
- 1900s
- PrimarySources
- SpringTrimester
- Women
- Suffrage
- WomensSuffrage
- Inquiry
- Investigation

By adding nearly a dozen tags, I can be sure this collection won’t get lost in the hundreds of articles and sources I uncover in my own investigations.

Through Twitter, I find dozens of blog posts and online articles to read, and it is impossible to remember them all. By tagging them, I create my own personal library of important information. When I need to create a lesson or remind myself about something I have read, I go to my “library” of articles. If I am creating a lesson using a historical focus, I can look for



▲ Ferguson’s Library of Congress’ primary-source set on women’s suffrage ([www.loc.gov/teachers/classroommaterials/primarysourcesets/womens-suffrage](http://www.loc.gov/teachers/classroommaterials/primarysourcesets/womens-suffrage)) includes numerous resources.

By Hadley J. Ferguson



## Social Studies

◀ Easily save sites with Diigo ([www.diigo.com/learn\\_more](http://www.diigo.com/learn_more)).



▲ Edmodo ([www.edmodo.com](http://www.edmodo.com)) is a classroom blog where students can practice tagging and teachers can connect with each other to find resources.

the tags that are connected to the time period. For the suffrage documents, that would be the 1900s tag.

If I want to create a certain type of learning experience, I can search by the type of lesson I want because I have tagged the documents with PrimarySources and Inquiry.

### Tagging with Students

Many educational sites offer great opportunities for your students to practice tagging. Edmodo is a classroom blog that uses tags as a way to access files and activities on the site. Use it to teach your students how to effectively identify what is important in a post. After students write their blog posts, respond to a question, or upload documents, they can create tags that identify the assignment, the date, or what is significant about it. With practice, students learn how to gain control over what they post and see how others choose tags for their work. They can add tags to what others post according to what they see as significant.

Diigo allows teachers to create folders where students can share Web resources they find. After identifying an important site, students can tag it with the main topics of the class or a specific area of research, allowing them to share what they saw as important with others. They will sharpen their skills at recognizing what is significant and increase their understanding from the online collaboration with their peers.

Students also use Diigo to store their collections of websites for their research. My students are currently learning about spices involved in the spice trade. They each research a spice, its origins, and traditional and current uses. Then they tag the articles that they find so they can share them with their classmates. They also add comments about the website to further identify what information can be found there. By tagging and commenting, my students are helping each other with their research and learning to become more effective digital collaborators.

Tagging is about identifying significance for yourself and for those with whom you are collaborating. It is a critical tool to navigate the wealth of information available in the Web 2.0 world. There is so much to be gained by interacting with educators around the world that we must learn how to benefit from it without becoming overwhelmed and exhausted. It is also a critical tool for students to learn, so that they can effectively engage and collaborate with their teachers and other students.

—Hadley J. Ferguson is a middle school history teacher at Springside School in Philadelphia. She is also the faculty representative to the Student Technology Board. Read her blog, *Middle School Technology Matrix*, at [www.hadleyjf.wordpress.com](http://www.hadleyjf.wordpress.com).

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## Tech for Art Educators

Educators in all content areas, either knowingly or not, have infused visual arts elements and principles of design into the digital products they have asked their students to create.

Visual arts teachers also need appropriate resources for ongoing learning in technology in art education. They need places to discuss and share their ideas and to reflect and receive feedback on the application of new classroom ideas. Andrew Churches has connected the first three revised levels of Bloom's taxonomy (remembering,

understanding, and applying) to Web 2.0 tools that allow for the identification of information, sharing through social networking and collaboration, and communicating in increasingly complex ways with other educators. Although not directly a part of Andrew Churches' Bloom's Digital Taxonomy ([edorigami.wikispaces.com](http://edorigami.wikispaces.com)), the concept of collaboration is linked to all of the levels and is a key component of digital age learning. The four resources featured here offer educators a way to share and learn from their peers.

—Camille Dempsey is an instructional technology consultant and arts specialist. She is currently a doctoral candidate in IT at Duquesne University in Pittsburgh, Pennsylvania, and a facilitator in two federal arts projects: Arts Educator 2.0 and Art in Action. She is a former arts professor and K–12 arts educator.

—Mara Linaberger, EdD, is a curriculum specialist with Intermediate Unit 1 in southwestern Pennsylvania, where she focuses on technology integration and the arts. She co-directs the Arts Educator 2.0 project and helped launch ISTE's SIGAE with Pennsylvania's arts and humanities adviser.



**The Art Education 2.0 Ning** (<http://arted20.ning.com>). Created by Craig Roland, associate professor of art and history at the University of Florida's College of Fine Arts, Art Ed 2.0 is a free social networking service. It allows participants to create and view membership pages, maintain a blog, participate in discussion forums, and create and join thematic groups. Members also have access to photo and video sharing, links to online resources, tutorials, Web 2.0 tools, and opportunities for live chat with other online members. The ArtEd 2.0 Ning is a rich virtual gathering space where art educators pose questions, showcase their students' artwork, and brainstorm ideas to connect art and emerging technologies.



**Arts Educator 2.0** (<http://artseducator20.wikispaces.com>). This regional professional development project, funded by the U.S. Department of Education, brings together art, music, theater, and dance educators from three counties in southwestern Pennsylvania in both online and face-to-face settings. Educators are currently documenting all of their learning processes on the AE2.0 Wikispaces site. Anyone can view the wiki, which contains examples of technology-infused unit plans, self-paced training on technology tools, and creative documentation of inquiry-based learning. This project is an example of how a regional service organization and a state department of education can collaborate to support meaningful professional development for geographically isolated teachers.

By Camille Dempsey and Mara Linaberger

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**The National Art Education Association website** ([www.naea-reston.org](http://www.naea-reston.org)). As the leading U.S. professional organization for art educators, NAEA offers a wealth of professional materials, such as lesson plans and curriculum resources, as well as information about committees and professional issues groups. The site has a monthly blog featuring voices from art educators in the field, a space for the creation of individual professional digital e-portfolios, and a member directory, as well as information on grants and advocacy resources. Arts educators can upload their student work to a classroom gallery portal powered by Artsonia and access important professional development resources. The NAEA website is the place to start if you're looking for the latest art education news, research materials, advocacy resources, legislation, conference information, or links to grant tools.



**ISTE's Special Interest Group for Arts Educators** ([iste.org/SIGAE](http://iste.org/SIGAE)). This SIG, which was created in 2009, aims to create a community of arts educators who regularly make use of technology to enhance learning and teaching and therefore help arts educators connect, collaborate, and share best practices. The SIG recruits and welcomes educators who infuse arts through technology into their various disciplines and help make explicit connections between arts and technology standards. SIGAE is rapidly expanding as a professional network for tech-minded arts educators. Find resources and learn more on the SIGAE wiki space (<http://sigae.iste.wikispaces.net>).



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## Using Games to Teach Ocean Awareness

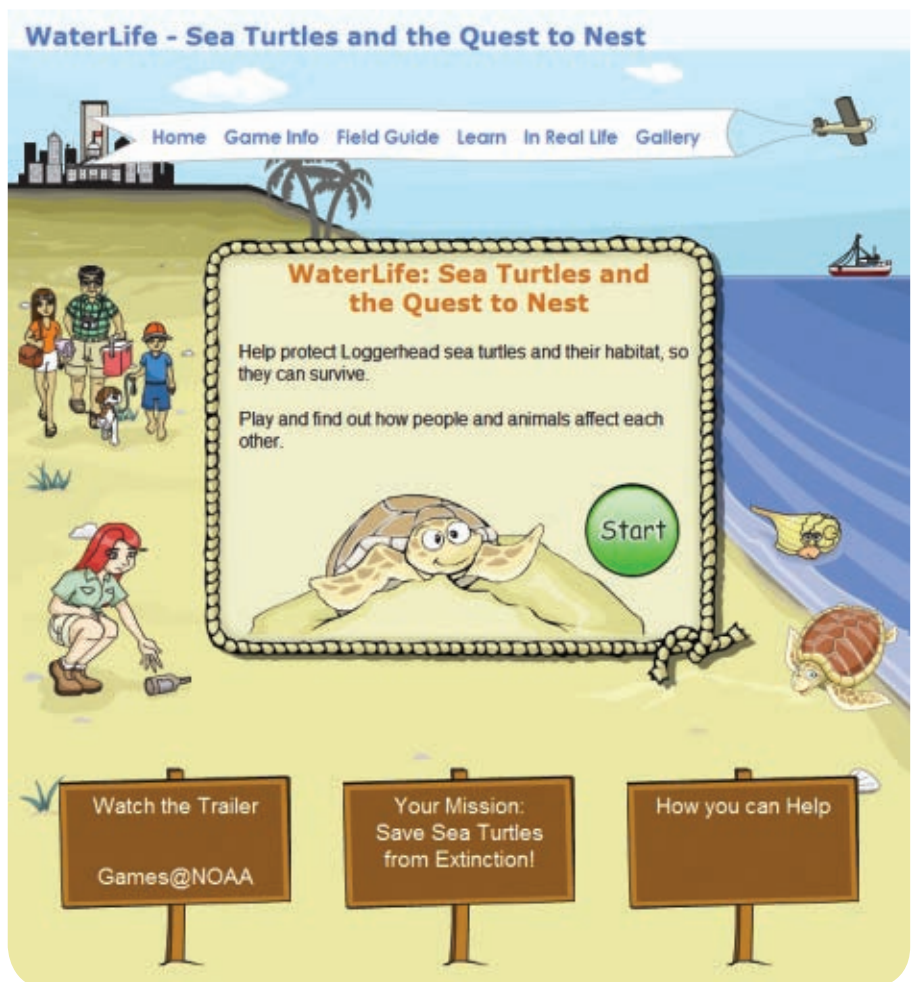
**B**OOM! Thunder rumbles overhead. Rain drops splatter on the ground, collect in a small pool, then overflow, splashing down a narrow ravine. Small streams tumble down a hillside, merge into a swollen creek, and pour into a broad, meandering river that swirls toward the sea. Salt water surges into the river's channel, mixing with fresh water to create a brackish, green-gray waterway. Welcome to an estuary—where the river meets the sea.

The U.S. National Oceanic and Atmospheric Administration (NOAA) now offers two free online games for middle school students in the WaterLife gaming series. Where the River Meets the Sea and Sea Turtles and the Quest to Nest are interactive science education games that engage middle school students in coastal and ocean ecosystems. These two games are a joint project with NOAA's Ocean Service Education, National Marine Fisheries, National Estuarine Research Reserve System, and the Montgomery College's Computer Game and Simulation Program in Rockville, Maryland.

### Where the River Meets the Sea

Oscar the Otter is sad. His estuary home is dying, and he needs help to save it. Valerie and Ze Claminator, two spunky game mates, join Oscar to tackle actual problems affecting coastal estuaries. As students and teachers explore the estuary, they learn about habitat ecology and restoration, water pollution, and marine debris. The game helps students build skills and raise their awareness of the importance of estuaries, water quality, tides, and local support to protect estuaries.

By Lisa Hill





## Science

In the United States, estuaries provide nurseries for more than 75% of the fish and shellfish harvested. They provide a diverse habitat for sheltering and nurturing birds, mammals, fish, shellfish, insects, and many other species. Estuaries filter many toxins, pollutants, and debris that could travel into the oceans. By the end of the game, students will recognize the importance of estuaries, the threats they face, and how students can help.

### Sea Turtles and the Quest to Nest

What's a sea turtle to do? As sea turtles swim ashore to lay eggs, they must navigate confusing shore lights, scattered debris, noisy tourists, barking dogs, and numerous predators.

NOAA's online game *Sea Turtles and the Quest to Nest* educates students about the hardships sea turtles endure to nest and survive. Students can play six minigames that teach about coastal habitat, the food chain, and complex coastal issues that affect sea turtles, including human and natural threats. It's enough to make a sea turtle's head spin.

By playing these environmental games, middle school students evaluate, explore, and engage in making decisions that increase their awareness and understanding of coastal and ocean issues. Each online activity provides detailed field guides, additional links, and information to enhance their journey. Enjoy these games at NOAA's gaming link (<http://games.noaa.gov>).

—Lisa Hill is a children's science writer who has written numerous articles and two books, *Gravity* and *The Properties of Elements and Compounds* for Heinemann Raintree. She also reviews educational technology for her ed tech blog, *School Tech Talk* ([www.schooltechtalk.com](http://www.schooltechtalk.com)).

**iste.org/LL**

## Find Free Tools and More



EduTecher (<http://edutecher.net>) is a no-cost, ad-free site that contains scads of great ed tech resources for teachers. Adam Bellow, director of technology for College Board Schools and a 2010 ISTE Emerging Leader, created the site to catalog and share Web tools for the classroom.

Now in its third redesign, the site aims to be a resource for a global audience of teachers, students, and parents at all levels of technology use and understanding. The sites it features are either free or offer free services to teachers. Keep in mind, however, that while EduTecher has no ads, many of the sites on the list do. The site also illustrates how tools not originally designed for education might be repurposed for classroom use.

EduTecher contains more than 1,000 links, and Bellow adds new sites daily. He also provides concise explanations of how each tool can be used in the classroom, with an educator's insight into the realities and rigors of daily teaching. A growing library of EduTecherTV webisodes also provides audio and visual support for basic training as well as specific classroom applications of various Web tools.

Every link allows users to provide feedback on the Web tool or to ask questions. Contributors can be notified by e-mail or RSS feed when a response is posted to a comment. Users can even post their own favorite Web tools, video responses, and images along with their comments, questions, or answers to one another on the site. Bellow strives to respond to all questions within two days of posting.

Bellow's range of selected websites offers something to teachers of all grade levels and any discipline. Additionally, his succinct descriptions of classroom use and a dynamic search feature allow even the busiest of teachers to effectively scan and select tools that might apply to a particular just-in-time need or developing interest. To facilitate this social networking, users can easily share any link directly from the Web tool's description.

EduTecher was the first Web resource for teachers to be released as a mobile application. More than 8,000 users already have installed the iPhone app. It's also now available for the Android, and Bellow plans to build an app for other mobile devices soon.

—Maria Ribera is an ISTE intern and the vice president for Assessment, Academic and Technology Services at Catholic School Management, Inc., of Madison, Connecticut.

Multidisciplinary



## Get Your Students Moving

**M**any students learn and retain information better when they move, so physical education is the perfect venue for these students to blend what is being taught in the classroom and what they are doing in the gym.

Often by the time students enter the gym, they have been sitting at their desks for a long time. Allowing them to move and interact with their classmates in a different manner can refocus them and enable them to see classroom material in a new way.

I have taught many students who have enjoyed and thrived with PE but who were not as successful in the classroom. A while back, I began to wonder how I could tap into their PE success and make it cross over into the classroom while using technology.

### Jogging and Sequencing

I started by modifying games to include the concepts covered in the classroom. With the youngest students, I began with a team number relay.

I put students in teams and had them jog across the gym to turn over a card. They had to bring the cards back in numerical order. So if they turned over the number 1 on the first leg of the relay, they would bring it back, and the next person would attempt to find number 2. If they didn't find number 1, they would return to the group without the card, and the next person would try.

They had to work quickly as a team, and to do so, they had to develop communication skills, demonstrate patience, and pay attention to the tone of their voices—all while recognizing and sequencing numbers. As they raced back and forth collecting

numbers, most students never realized how much exercise they were getting.

### Making Movies

The activity that really engaged my students was filming them doing various activities. Shortly after bringing my Flip video camera to class the first time, I discovered that students love to be filmed, love to film each other, and love to watch the videos. What I did not anticipate was how a simple video could teach them how to be respectful audience members and active listeners, project their voices when being filmed, and encourage other classmates. It was a joy to watch the pride on their faces when they saw the finished project. Just as important was my ability to now share with a larger community what was happening in the gym.

### Podcasting a Healthy Message

My next venture was a joint project with students and their parents to produce a podcast of the book *Happy*

*and Healthy*. This book has one page for parents to read and one page for students to read. I recorded each parent and child and put it all together in a podcast. It was a wonderful way to reinforce healthy habits and have the parents and students interacting. Watching the students' faces as they read for their parents was priceless.

### A Film with Heart

In the Heart Adventure Challenge course, students pretend to be the blood moving through the heart. They work in small groups to film and narrate the path of the blood. They also develop, design, and produce a commercial for the entire school on how to keep hearts healthy. The students love this unit because they are physically active while learning facts, and the amount of information they retain during the task is amazing. All students find their place in the development of the filming. Whether their task is to share an idea, help with the pronunciation of difficult words, film the scene, or just offer support to the rest of the group, they each feel ownership of the finished product.



### Let the Games Begin

My last example involves a unit on the Winter Olympics. Every student in our lower school was placed on one of six teams representing different countries. The classroom teachers had their students make flags of the countries and discuss the different cultures.

We had "athletes" march in the opening ceremony, take the oath, and light a flame. Some students participated in modified Olympic contests,

By Betty Ann Fish

I discovered that students love to be filmed, love to film each other, and love to watch the videos.

such as a biathlon and a cross-country ski race that was held in the halls with classes coming to the door to cheer on the athletes. And because the students were organized by country and not grade level, they were able to interact with students of different ages.

The unit highlight was a Skype call to Vancouver during the 2010 Olympic Games. The first graders talked with a member of the U.S. Olympic Committee's media department. This technology connected my students to the larger world and gave them the opportunity to formulate, articulate, and ask questions in an authentic situation.

A few weeks later they said to me, "We need to Skype with Ms. Vanessa because we do not know what she is doing now." Since then we have chatted with her and learned about her new job. When the students ask to Skype, you know it means something to them.

This unit fueled a passion for the Olympics for many of our students. When one girl, while on vacation, saw on the news that Lindsey Vonn was returning to the town where she was vacationing, she asked her parents to take her to the celebration. The student was able to hold Vonn's gold medal, get her autograph, and have a

picture taken with her. If not for the Winter Olympics unit or the Skype call, the welcome-home celebration would not have held any interest for this student.

While it takes time to think of the new ideas to connect PE to technology and the academic classroom, ultimately the students are enriched. So start collaborating with your colleagues, be creative, and take some risks. Every discipline needs to teach digital age skills, creativity, problem solving, and global awareness.

—Betty Ann Fish is the chair of the physical education department at Springside School in Philadelphia. She is an advocate for 21<sup>st</sup> century education, technology, and classroom curriculum in physical education.

## Welcome new ISTE Corporate Members!

### SkillsTutor

SkillsTutor, a Houghton Mifflin Harcourt company, is a leader in educational solutions. They are a publisher for online supplemental K–12 programs that are used to help increase proficiency in math, reading, writing, language, science, and workforce readiness. SkillsTutor Mobile leverages the multimedia capabilities of smart mobile devices and extends "access anywhere." These best-in-class, award-winning solutions are research-based, align to state and national standards, and are proven to deliver results.

[skillstutor.com](http://skillstutor.com)

### 3M Mobile Interactive Solutions

For more than 50 years 3M has provided educators with high-quality products that enhance teaching and learning in the classroom. 3M products include everything from digital projection equipment, overhead projectors, and transparency film to super-close projection systems and the latest in micro pocket projectors. Many Choices = Many Solutions!

[3m.com/meetings](http://3m.com/meetings)

[iste.org/correlations](http://iste.org/correlations)





## Collaboration Makes the Ed Tech World Go Round

**R**emarkable advances in transportation, telecommunications, and the Web have provided unprecedented opportunities for international collaborations that will shape the future of ed tech as a global phenomenon. Although the worldwide financial situation has been troubling in recent years, members of the international ed tech community have been working together and sharing with each other more than ever. This is largely due to the many varied opportunities for scholars and teachers to get to know each other over the past 20 years through national and international initiatives, conferences, Fulbright programs, sabbaticals, and exchanges. These global collaborations have happened primarily in three areas: standards, conferences, and research.

### Standards

The educational standards movement has been prominent in U.S. schooling since the 1980 National Council of Teachers of Mathematics publication of *An Agenda for Action: Recommendations for School Mathematics in the 1980s*. This seminal document paved the way for a host of other content-area standards as well as the NETS•T, which were introduced in 2000 and revised in 2008.

Other developed nations (including the United Kingdom, France, Italy, China, and India) have initiated national technology standards for teachers, and the United Nations Educational, Scientific, and Cultural Organization (UNESCO) has recently attempted to create a set of international standards for teachers in all nations. These standards, in the form of the ICT Competency Framework for Teachers, combine a focus on information and communication technology (ICT) skills with emergent views in pedagogy,

curriculum, and school organization. The framework was designed to support the professional development of teachers' ICT skills to improve their teaching and collaboration with colleagues and, ultimately, to help them become innovation leaders in their institutions.

### Conferences

Perhaps the best opportunities for teachers, teacher educators, administrators, and other educational ICT professionals to come together and share ideas, research, and practices occurs at international ed tech conferences. The synergy that develops through sharing research, practices, and ideas by interacting with colleagues from around the world serves as a powerful catalyst that drives our field forward.

For example, renaming the National Educational Computing Conference (NECC) to ISTE's annual conference and exposition was more than just a name change. It represented ISTE's commitment to hosting a conference that serves an international community of scholars and practitioners interested in furthering the role of technology in education. For more information, visit the conference website (see Resources). Another important international ed tech conference is the World Conference on Computers in Education, which occurs every five years. Since 1970, the International Federation for Information Processing's (IFIP) Technical Committee 3 for ICT and Education has organized and conducted this event at host sites around the world, most recently in Brazil and South Africa. Attendees represent all regions of the globe, and participants engage in "working groups" that focus on issues in specific areas such as primary,

secondary, higher education, lifelong learning, professionals, and research. The working group on research will also meet in March in Nashville, Tennessee, in conjunction with the Society for Information Technology and Teacher Education (SITE) conference, which has a long tradition of welcoming international participation that is central to its structure and mission. Ed tech leaders from around the world participated in EDUsummit09 in The Hague, Netherlands. Organized by Kennisnet, the British Educational Communications and Technology Agency (BECTA), and ISTE, this conference addressed implications of scholarly findings on the use of information technology in education. Professionals, policy makers, and researchers presented and discussed the implications of research findings in the IT field and developed a call for action on the next steps for the integration of IT in teaching and learning. EDUsummit11 will be in Paris, with SITE, IFIP, the *Journal of Computer-Assisted Learning (JCAL)*, and UNESCO joining the original sponsors.

## Research

Several collaborative efforts have resulted in valuable resources for improving our understanding of the global implications of technology use in education. The 1996 publication of *Children and Computers in School* by Betty Collis and her colleagues marked an early effort to explore the emerging role of technology in education at a global level. Three multinational studies formed the foundation of the book: the International Association for the Evaluation of Educational Achievement (IEA) Computers in Education (CompEd) project, the Information Technology in Education and Children project, and the Young Children's Computer Inventory project. Findings from these studies suggest that:

- Computers and related information technologies are being incorporated into daily education practice in virtually every corner of the world.
- Teacher competence and confidence with IT is the principal determinant of effective use.
- Educationally meaningful exposure to computers in school fosters positive attitudes toward computers.
- Gender differences in knowledge of and attitudes toward computers exist, especially at the postprimary level.

IEA has continued its efforts with the Second Information Technology in Education Study. Three follow-up studies to the CompEd research addressed educational IT use from countries representing every continent but Antarctica. Major findings indicated that:

- There was a rapid increase in the percentage of schools with access to computers in all participating countries and at all grade levels.
- Student-to-computer ratios differed substantially across the countries (9:1 in Canada and 12:1 in Denmark and Singapore, compared with 133:1 in Lithuania and 210:1 in Cyprus), and the ratio continued to decline over the period of the studies.
- The impact of ICT use on students was highly dependent on the teaching approaches adopted when ICT was used. Greater student gains in digital age skills were reported by teachers who provided more student-centered guidance and feedback and who engaged more frequently in advising students on group work and inquiry projects.

Another major effort to present research on educational technology from a global perspective is the 2009 *International Handbook of Information Technology in Primary & Secondary Education*, edited by Joke Voogt and Gerald Knezek. The handbook represents the current thinking and

research of 136 leaders in the field from 23 nations. A major focus is ICT's potential to improve K–12 education, including the design and potential of ICT-based student learning environments, its role in the learning process, and emerging technologies for education. A second important theme, implementation of IT in educational practice, includes chapters on curriculum, competencies and attitudes, teacher learning, and international and regional programs and policies.

As we worked on this column, we became increasingly aware of the worldwide interconnectedness of the work going on in educational technology. Our generation of ed tech enthusiasts seems to have become a family. International organizations, conferences, and collaborations have brought the members of our field together, despite distance and cultural differences, in our ongoing commitment to promote the use of educational technologies in ways that will benefit today's youth and tomorrow's society.

## Resources

EDUsummit: <http://edusummit.nl>  
 International Association for the Evaluation of Educational Achievement Studies: [www.iea.nl](http://www.iea.nl)  
 International Federation for Information Processing Technical Committee 3, ICT and Education: [www.ifip-tc3.net](http://www.ifip-tc3.net)  
 ISTE's annual conference and exposition: [isteconference.org](http://isteconference.org)  
 ISTE's NETS: [iste.org/nets](http://iste.org/nets)  
 Society for Information Technology and Teacher Education: <http://site.aace.org>  
 UNESCO ICT Competency Framework for Teachers: <http://tinyurl.com/29f5xf>



Dale Niederhauser is an associate professor in the Center for Technology in Learning and Teaching at Iowa State University and a former Head Start teacher.



Gerald Knezek is director of the Institute for the Integration of Technology into Teaching & Learning at the University of North Texas and president of SITE.



# BUYER'S **guide**

If you have ever lost an important document, turned off your computer without saving changes, or had a hard-drive failure without a backup, you are familiar with the frustrating and time-consuming task of recreating what you lost. The good news is that the price of storage has come down considerably, and external hard drives are lighter and smaller than ever.

With the advent of larger computer hard drives and bigger media files, there is a growing need for additional space to back up our work and for a more convenient way to store and retrieve data. Storage devices can be as small and portable as tiny memory sticks or as large as 16-pound, 10 terabyte (TB) desktop drives. In between, there are portable external drives, which often weigh less than a pound.

The external hard drives listed here are small and light enough to be considered portable. Whereas a laptop can power most, others require an AC power adapter.

For comparison, all of these models hold 1 TB of data. A terabyte is one trillion bytes, or 1,000 gigabytes, according to the International System of Units. Drives that hold 500 GB or 250 GB are less expensive, and several brands offer 2 TB versions.

When shopping for a hard drive, first decide how large a drive you need. The rule of thumb is to choose a destination drive that has at least 1.5 times the capacity of the drive you are backing up. The drives listed here have more than enough room to back up most late-model laptops and desktops. Note that if a drive comes formatted for either a

PC or Macintosh, you can usually reformat it for the other platform.

Another important consideration is a drive's connectivity to a computer, which determines its data transmission speed. Some newer hard drives offer a USB 3.0 interface for data transfer that is up to 10 times faster than a USB 2.0 connection. Your computer must support the USB 3.0, however. Drives are backward compatible to USB 2.0, so if you purchase a computer later on that does have a USB 3.0 port, your drive's transmission speed will increase dramatically.

In addition to a drive's mechanical specs, consider the software that will enable incremental backup of files. To save time and space, incremental backups store only the changes made since the previous backup. Software is required for scheduling backups, saving data, and retrieving data. Time Machine comes free on Macintosh computers, and Windows 7 users can use a built-in backup utility. There are also third-party options that support backups and drive imaging tools that take a snapshot of your drive, compress it, and save it for later recovery. If you are concerned about privacy, some drives include, or are compatible with, encryption software.

Whatever drive you choose, make sure that you back up your data on a regular basis. Also, if you back up data consistently, you can be a role model for your students and know that the time and effort you put into a project will not be lost.

—Maureen Yoder, EdD, is on the faculty of Lesley University's Technology in Education Program.

## External Hard Drives

### Company

#### Hitachi

[www.g-technology.com](http://www.g-technology.com)



#### Iomega

[www.iomega.com](http://www.iomega.com)



#### LaCie

[www.lacie.com](http://www.lacie.com)



#### Seagate

[www.seagate.com](http://www.seagate.com)



#### Toshiba

[www.toshiba.com](http://www.toshiba.com)



#### Western Digital

[www.wdc.com](http://www.wdc.com)



Model	Price	Weight	Dimensions	Connectivity	Transmission Speed	Software	Notes
G-Drive	\$190	2.6 lbs 1.2 kg	5.12 × 1.82 × 9.25" 235 × 130 × 46 mm	eSATA, FireWire 800, FireWire 400, USB 2.0	100 MB/sec w/eSATA	Compatible with Time Machine, SuperDuper, or Mac/PC backup software (not included)	All aluminum enclosure, A/C adapter required
eGO Portable Hard Drive Superspeed USB 3.0	\$160	14.4 oz 408 g	3.67 × 1.02 × 5.15" 96 × 26 × 131 mm	USB 3.0	Up to 5 GB/sec	lomega Protection Suite (free download)	Encryption, drop resistant up to 7 feet, locks in place
Rugged USB 3.0	\$160	8.5 oz 241 g	3.5 × 1 × 5.7" 90 × 28 × 145 mm	USB 3.0	Up to 5 GB/sec	LaCie Backup Assistant (PC and Mac), Time Machine compatible (not included)	Drop resistant up to 7 feet
Rikiki USB 3.0	\$140	6.7 oz 176 g	2.9 × 4.6 × .52" 75 × 118.5 × 13.4 mm	USB 3.0	Up to 5 GB/sec	LaCie Backup Assistant (PC and Mac), Time Machine compatible (not included)	Dimensionally one of the smallest external hard drives
FreeAgent GoFlex Ultraportable	\$160	10 oz 284 g	3.51 × 0.87 × 4.71" 120 × 89 × 22 mm	USB 2.0 or 3.0 (\$49.99 upgrade)	Up to 5 GB/sec with USB 3.0 and 480 MB/sec with USB 2.0	Compatible with most backup software for Mac and PC (not included)	192-bit triple DES encryption, A/C adapter included
Canvio Portable 3.0	\$170	6.3 oz 178 g	3.1 × 4.7 × .65" 79 × 118.9 × 16.5 mm	USB 3.0	Up to 5 GB/sec	Windows-based NTI BackupNow EZ	Password- protected 256-bit data encryption, drive space alert
Canvio for Mac	\$170	6.3 oz 178 g	3.1 × 4.7 × .65" 79 × 118.9 × 16.5 mm	USB 2.0	Up to 480 MB/sec	NTI Shadow 5	Password- protected 256-bit data encryption, drive space alert, rubberized edges
My Passport Essential SE	\$170	7 oz 198 g	3.2 × 0.7 × 4.3" 18 × 110 × 83 mm	USB 3.0	Up to 5 GB/sec	SmartWare	Backup software has detailed visual interface

# PRODUCT reviews

## Finale 2011

By Paul Wurster

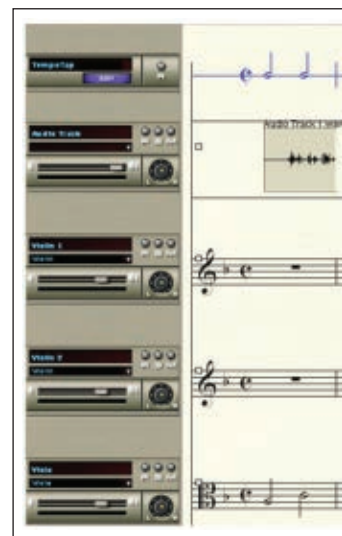
Whether you're rearranging one of Madonna's classics for your glee club or adding tuba parts to a Twisted Sister song for your marching band, access to a high-quality music notation program is essential.

Finale 2011, MakeMusic's latest edition, offers expanded functionality and more support for music teachers who create, edit, audition, and print musical scores for a variety of ensembles.

This year's version comes with additional templates, tools, and materials specifically for teaching music. Teachers can use Finale's 350 worksheets to customize exam questions or create new exercises for different music classes. Worksheets cover elements of music, rhythms, chords, terminology, and even jazz improvisation. The program includes 400 flashcards and several musical puzzles and games, such as crosswords, bingo, and Sudoku.

Finale's Exercise Wizard helps teachers create lessons for vocal or instrumental ensembles based on a combination of exercises. The program has the essential selection of scales, intervals, and arpeggios, which teachers can mix and match to create their own lesson plans. The wizard will also transpose exercises by octaves to stay within acceptable ranges for individual instruments at the skill level teachers select (basic, intermediate, or advanced).

Created for beginning music students, Finale's AlphaNotes font places note names or solfège inside noteheads to help students learn to sight-read



Finale offers many ways to enter and change notes, including a MIDI keyboard, a mouse or computer keyboard, wind instruments through the MicNotator feature, or sheet music files imported from a scanner.

or sight-sing faster. Finale also supports colored noteheads for use with Boomwhackers tuned percussion tubes—brightly colored plastic instruments that sound a musical note when students whack them against a surface.

Finale comes bundled with a collection of 375 instrument sounds from Garritan Personal Orchestra. These instruments are sound samples of actual orchestra instruments that Finale uses to create improved sound during playback. Finale also includes a library of marching percussion sounds by TapSpace. Both are a vast improvement on the typically low-quality sounds that a computer's soundcard produces.

If you choose to load Garritan and TapSpace, MakeMusic recommends

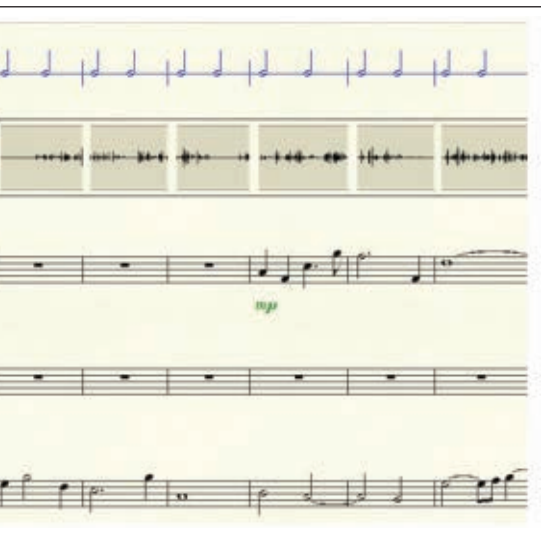
1 GB or more of RAM for optimal performance—the more RAM, the more available sounds—but bear in mind that an additional 2 GB of hard-drive space is required to use all the sounds that come with Finale.

Finale 2011 is compatible with PCs running Windows XP, Vista, and Windows 7 or Macs (G4 or higher recommended) using OS 10.5 or later. The program uses more than 600 MB of space and requires a minimum of 512 MB of RAM without Garritan and TapSpace.

MakeMusic designed Finale for professional musicians, arrangers, teachers, composers, and music engravers. It is not well suited to younger students, in part because it is so robust. Finding



Finale's Studio View allows users to mute, solo, and adjust volume, pan, program, and other parameters for individual staves. This is useful for hearing individual parts or changing the instrumentation assigned to a staff.



specific functions, understanding the interface, and figuring out how to use Finale's vast array of tools can be a challenge even for adults.

At \$600, notation software of this quality can be prohibitively expensive for some schools. Thankfully, MakeMusic offers educational pricing and a lower-cost upgrade if you own a previous version. The upgrade is a good option if you have the 2008 or 2009 edition and would like to add some of the functionality mentioned above. The \$120 upgrade may feel a bit steep if you already have the 2010 version. Finale 2011 does offer an improved lyric entry interface, its default spacing of music with lyrics is more intelligent, and multiple verses of lyrics align better, among other improvements, such as additional fonts and new staff layout capabilities. Nevertheless, many features of the latest version are not new, but have simply expanded or offer greater ease of use.

MakeMusic offers Finale Lab Packs that include five installations for \$850 or site licenses priced at \$145 per seat for 10–29 users and \$130 per seat for 30 or more.

Note that you cannot open Finale 2011 files in previous versions of the program, so if you already use Finale and you want to outfit an entire classroom, upgrading the version you have is something you may want to factor into the total cost.

#### MakeMusic, Inc.

\$600 Retail

\$350 Academic Pricing

[www.finalemusic.com](http://www.finalemusic.com)



Paul Wurster is managing editor for L&L. He has 20 years' experience as a professional musician.

## iste is Making IT Happen

Congratulations to these ed tech leaders, awarded jackets at the following conferences and events:

★ **Ken St. James**

Florida Council of Instructional Technology Leaders (FCITL)  
FCITL Annual Awards Luncheon

★ **David Couch and Kim Duvall**

Kentucky Society for Technology in Education (KySTE)  
KySTE Technology Conference

★ **Kate Kemker and Rita Oates**

Florida Society for Technology in Education (FSTE)  
FSTE Annual Meeting

[iste.org/makingithappen](http://iste.org/makingithappen)

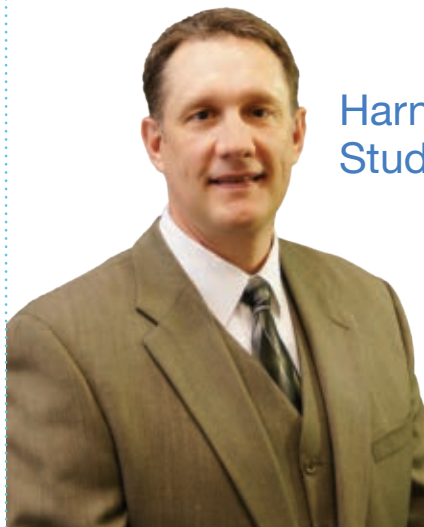


Thank You  
Making IT Happen  
Sponsors!



[pearsonfoundation.org](http://pearsonfoundation.org)





## Harness Technology to Meet Your Students' Diverse Learning Needs

I've been highlighting some exciting results as Katy Independent School District's technology department moves from a technical focus to one that concentrates on how technology can meet the instructional needs of today's digital learner. Besides focusing on our internal support model, identifying appropriate Web 2.0 tools, and making interactive equipment available in our classrooms, we also looked at our students' varied learning needs.

Our instructional technology division helps support what we call "power student expectations." These are objectives that students did not achieve a high pass rate on when assessed. As we work to improve these percentages, it is important that teachers look at different models of instruction, including those that are enhanced by technology.

To address this, our integration specialists and curriculum specialists look at various approaches that will enable students to have deeper understanding or gain meaning from topics that are hard to understand. They hold Adobe Connect training sessions with the teachers to help build capacity. They coordinate their efforts using the 5 E lesson-planning model to help teachers build deeper, richer, rigorous lessons that use Web 2.0 tools or an interactive lesson that truly involves students in learning.

The 5 E model is:

1. Engage the learner
2. Explore the concept
3. Explain the concept
4. Elaborate on the concept
5. Evaluate students' understanding

Technology is a perfect tool for enhancing comprehension of difficult concepts. For example, a teacher might ask students to collaborate and then create a video on demand or a podcast based on their understanding of the material. The integration and curriculum specialists would then take that product and examine it to determine where teachers could make changes that would add depth to the learning. Using content from a Discovery Education video that addresses the topic is another way to add meaning to students' learning. Communicating collaboratively via digital posters, VoiceThreads, wikis, blogs, and connecting through video conferencing to exchange ideas between students are all ways that our teachers, with guidance from our integration and curriculum specialists, have looked at addressing the challenges within our curriculum.

Our main goal is to ensure that learners are engaged with the subject matter inside and outside the school walls. Indications are that we have done just that! Students are amazing us daily. Struggling learners are able to access the wikis and blogs outside the school day. We are finding that all students have started taking more responsibility for their own learning.

It is most rewarding to see how far our IT department has come in shifting its focus to our true recipients of technology—the students. Katy ISD's IT organization understands that, from infrastructure to support to actual instruction, it takes us all working together to ensure our students have the tools they need to thrive in today's increasingly digital world.

### By Lenny Schad

*Lenny Schad is chief information officer for Katy Independent School District (KISD) in Texas. He is a 2010 Consortium for School Networking Volunteer Hall of Fame inductee. Prior to joining KISD, Schad spent 17 years in the oil and gas sector.*

# WHAT'S **new**



AverMedia has released two videoconferencing systems for schools. The AverComm **H100 and H300** series offers high-definition-quality video, dual screen display, content sharing, and a professional speaker phone. Both systems expand distance learning programs and global collaboration in schools. The H300 adds multipoint capabilities, screen capture, and meeting session recording to a USB flash drive.

**MORE INFO:** [www.averusa.com](http://www.averusa.com)



NEC Display Solutions has added an ultra-short-throw series to its line of projectors. The new **U Series** consists of the 3,000-lumen U300X and the 3,100-lumen U310W. Both mount to the walls above a standard or interactive whiteboard. These 3D-ready, high-contrast projectors eliminate shadows and glare and offer XGA or WXGA resolution and dual computer input connectivity. They also come with remote volume control, ECO Mode technology for extended lamp life of up to 3,000 hours, and a 20-second start-up.

**MORE INFO:** [www.necdisplay.com](http://www.necdisplay.com)

The **Amazing People Club** is a new series of books, e-books, and digital audiobooks featuring a first-person perspective on some of the world's most noted events, inventions, and locations. The Amazing People Club includes titles such as *Amazing Americans*, *Amazing Careers*, *Amazing Women*, *Amazing Entrepreneurs*, *Amazing Love Stories*, *Amazing People of London*, and *Amazing People of New York* as well as short-format titles such as *Amazing Scientists*.

**MORE INFO:** [www.amazingpeopleclub.com](http://www.amazingpeopleclub.com)



Rand McNally Education has launched an **education website** designed to provide educators with geography enrichment tools. The site offers a monthly newsletter, teaching tips, downloadable maps, and geography and product information.

**MORE INFO:** [www.randmcnally.com/education](http://www.randmcnally.com/education)



The Alliance for Investor Education (AIE) has included a guide on its website to help parents raise financially savvy kids. **Teaching Your Kids about Saving and Investing: A Guide for Parents** offers 10 online resources that discuss topics such as saving, investing, stocks, and planning for college expenses. Featured resources also include online games as a means for teaching financial lessons and links to previously published resources for investor education in the classroom. AIE is composed of 20 leading U.S. financial-related foundations, nonprofit organizations, associations, and governmental agencies.

**MORE INFO:** [www.investoreducation.org/teachingyourkids](http://www.investoreducation.org/teachingyourkids)

**ABCMouse.com Early Learning Academy** is a new online learning environment designed for children aged 2–6.

It teaches basics in reading, math, beginning science, social studies, art, and music via online books, games, songs, puzzles, art activities, and printables contained within more than 350 custom lesson plans. A reward system encourages engagement in this safe, advertisement- and link-free site that is available at no cost to all public schools in the United States and Canada that apply. Parents can buy subscriptions to the site.

**MORE INFO:** [www.ABCmouse.com](http://www.ABCmouse.com)



*L&L* intern Maria Ribera compiled this information from press releases sent to the *L&L* editorial office. The *L&L* staff does not review the products and resources, and they are offered here without recommendation. Send press releases to [products@iste.org](mailto:products@iste.org).





Teachers can register for a free one-year subscription to **PaperToolsPro**, an online software program created by ePen&Inc and M3Designs, Inc., that facilitates the writing process and ensures that students write in their own voice and cite resources correctly. Normally priced at \$225, the free PaperToolsPro subscription allows one teacher per school to pilot the program with up to 150 students. PaperToolsPro is designed to teach high school and college writers the proper way to take notes, cite written work, manage the research writing process, and eliminate plagiarism. The deadline for registering is June 30.

**MORE INFO:** [www.papertoolspro.net](http://www.papertoolspro.net)



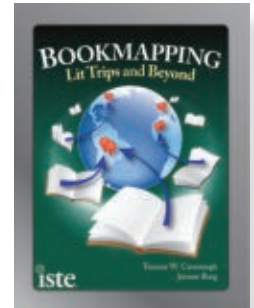
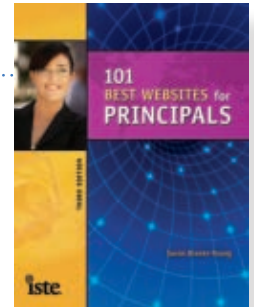
European-based **Sculpteo** is now offering its online 3D printing services to U.S. customers. With the ability to transform digital files into real-life, physical objects, Sculpteo.com allows the transformation of 3D files, 2D drawings, and even simple text into 3D objects. Design options include various upload formats as well as the use of predesigned images from Sculpteo's online gallery and 3D files available on the Web. Objects can range from 2 to 10 inches depending on the type of material chosen for the end product, and color choices range from monochrome to multicolor.

**MORE INFO:** [www.sculpteo.com](http://www.sculpteo.com)

ISTE has two new books on the horizon.

**101 Best Websites for Principals, Third Edition** will be released this month, and **Bookmapping: Lit Trips and Beyond** is scheduled to be released in April. *101 Best Websites for Principals* by Susan Brooks-Young is an updated guide to the most relevant and useful websites to help busy principals find resources for finance, curriculum, professional development, social and legal issues, and more. In *Bookmapping: Lit Trips and Beyond* by Terence W. Cavanaugh and Jerome Burg, readers will discover how to use bookmapping as a dynamic, interactive, crosscurricular tool that helps students not only develop a better understanding of places, cultures, and the books they are reading, but also make connections to the subjects they study in school.

**MORE INFO:** [iste.org/store](http://iste.org/store)



*eSchool News*, an online newspaper that covers education technology and school reform, has created a new addition to its website designed to keep educators and school leaders informed on the latest school-reform issues. **Beyond Superman: Leading Responsible School Reform** combines the latest news, research, video, and resources to create a dynamic and interactive online platform for engagement and conversation about what it will take to improve U.S. schools. Other sections help school and community leaders explore real, effective strategies for moving education forward.

**MORE INFO:** [www.eschoolnews.com/reform](http://www.eschoolnews.com/reform)

## Coming Next Issue

### Instill Creativity in Your Classroom

A shared vocabulary helps teachers and students know what it means to "be creative." See how Guilford's time-tested model of divergent thinking makes planning and doing creative projects more meaningful in your classroom. Candace Hackett Shively offers definitions, practical strategies, and Web 2.0 project examples.

### Building Tech Leadership

Despite a transient population of students and staff, the American School of Bombay has embedded a culture of tech integration through a distributed leadership approach. Shabbi Luthra, the school's director of technology, and Paul Fochtman, superintendent, explore the six elements of this successful model.

### How Do You Define Innovation?

What does innovation mean to you, and how do you seek it out in learning and teaching? ISTE's Special Interest Group for Innovative Learning Technologies posed that question to members recently and received 53 diverse and thoughtful responses. Lisa Sjogren, SIGILT communications chair, summarizes the findings.

## Become a Better Advocate for Ed Tech



## VOICES CARRY

By Hilary Goldmann

*Hilary Goldmann, ISTE's director of government affairs, has 20 years of experience in public policy and advocacy. Her column appears in every other issue of L&L.*

**T**he ISTE Public Policy and Advocacy Committee held a retreat at the end of 2010 to review ISTE's grassroots and mobilization efforts over the past several years and to identify strategies and tactics we should implement to build a stronger advocacy machine.

Collectively, we've done a stellar job of making our voices heard by sending letters via the Ed Tech Action Network (ETAN, [www.edtechactionnetwork.org](http://www.edtechactionnetwork.org)); developing advocacy products, such as ETAN in a Box; and hosting the ABC's of Advocacy conferences. We continue to get rave reviews about the Storm the Hill event we hosted during NECC 2009 in Washington, D.C. We've developed the ISTE Advocate of the Year Award to recognize outstanding leaders, held focused webinars, and provided advice and support to numerous affiliates on growing their own advocacy efforts. The ISTE Advocacy Toolkit ([iste.org/advocacy/toolkit](http://iste.org/advocacy/toolkit)) has also been an invaluable resource for ISTE members.

Our efforts have influenced U.S. legislation through ISTE's lobbying presence in D.C., ETAN, and meetings that our members have had with policy makers and their staff during the annual Education Technology Policy Summit in Washington, D.C. Our successes include:

- \$650 million in stimulus funds for ed tech
- Several billion dollars of broadband stimulus funds to benefit K–12 schools
- An increase to the E-Rate cap for inflation as well as other important E-Rate changes
- Understanding from both the U.S. administration and bipartisan members of Congress that ed tech is a critical component for the

reauthorization of the Elementary and Secondary Education Act

The National Education Technology Plan had input from ISTE stakeholders, and the National Broadband Plan has a strong emphasis on education. We have influenced state policy as well by supporting our state affiliates—most recently in Texas on digital textbook legislation, in California to support efforts to release unspent ed tech stimulus funds, and in Virginia to maintain funding for instructional technology resource coordinators.

Lawmakers at all levels of government are faced with growing economic concerns and increasing pressure to do more with less. It is now time for ISTE and its members to step up our game on advocacy. Our focus will be twofold:

- Increasing the number of members involved in grassroots efforts
- Supporting our most active advocates (grass-tops) when they engage in meetings with policy makers and their staff at forums, such as one-on-one meetings, policy-maker school visits, and state lobby days, or attend school board and town hall meetings.

Keep watching ISTE's advocacy webpage ([iste.org/advocacy](http://iste.org/advocacy)) and ISTE Connects ([iste.org/connects](http://iste.org/connects)) for more ideas about how to support ed tech legislation. Follow me on Twitter (@hgoldmann) and read my blog at [iste-community.org](http://iste-community.org). Send your suggestions about how ISTE can help you become a better advocate to me at [hgoldmann@iste.org](mailto:hgoldmann@iste.org).



## Is It Time to Make Mathematics More Fun?

There was a time in my life when I was not ashamed—and perhaps even a tiny bit proud—of being bad at math. I am a “word person,” I would tell myself, which meant I was exempt from being a “math person.” Then I heard Malcolm Gladwell speak at NECC in 2009, and I felt a little sheepish. Gladwell explained that Americans tend to think of themselves as good at math or bad at math. Asians, on the other hand, don’t think of math as a skill you either have or don’t have. They think that if you try hard enough, you’ll get it. Asian students do better in math than their U.S. counterparts simply because they work at it, Gladwell asserted.

I think Gladwell is right. I am deficient in math because I didn’t work at it. I didn’t work at it, because, frankly, it was work—tedious, boring, complicated work.

I was thinking about that recently when I read a couple of blog posts about better ways to teach math. For decades, Dave Moursund has been urging educators to let computers do the computing. He advocates freeing students from laboriously writing out formulas and instead having them pose problems, solve problems, and develop math intuition. In his blog post “Teaching Kids Real Math with Computers,” Moursund links to a TED Talk video by Conrad Wolfram, who discusses ways to make math more fun through the appropriate use of computers. Moursund writes:

We now have the computer hardware and software availability that can be used to inexpensively and widely implement the ideas that I have been advocating. We can change math education by letting ICT facilities do what they do best in math, educating students so their brains can do what they do best in math, and producing a curriculum that is fun and interesting.

In his post, “Getting to the Core of Our Math Problem” on the Innovative Educator blog, Jason Gutnicki echoes many of Moursund’s beliefs about math:

In short, math helps us build trains, design houses, balance our budget, run a business, lose weight, and so on. However, this is not the way we are taught math. Instead, there is a heavy focus on mastering the algorithmic processes used in math. It is no wonder that many of us find math irrelevant and disconnected from real life problems.

Gutnicki’s post drew 22 comments, many from other educators, such as these:

Elementary students learn best when topics are presented to them in a game-like manner, since that is what they are used to doing during their leisure time.

—Taisiya Zuyeva

I can remember early on learning mathematics and having an enjoyable time in school. As the years went on, I began having trouble understanding the ways to answer certain problems. This feeling of embarrassment and confusion made me start to lose my enjoyment with mathematics. I began asking the same question that students today still ask their teachers, “Why do we have to learn this?”

—John Isola

If we want to build a strong background in math, then we need to link math to the world around us, which includes technology. However, if we want to teach students to do math quickly without understanding, then teachers will continue to teach algorithms.

—Melissa

Read the article “Computational Thinking: A Digital Skill for Everyone” on page 20, and you’ll realize how relevant these math skills are and how broadly they apply across all disciplines. Teaching math the old-fashioned way simply does not compute.

### Resources

Conrad Wolfram, “Teaching Kids Real Math with Computers”: [www.youtube.com/watch?v=60OVlfAUPJg](http://www.youtube.com/watch?v=60OVlfAUPJg)

Information Age Education Blog, “Teaching Kids Real Math with Computers”: <http://i-a-e.org/iae-blog/teaching-kids-real-math-with-computers-17-minute-ted-video.html>

Innovative Educator, “Getting to the Core of Our Math Problem”: <http://theinnovativeeducator.blogspot.com/2010/06/getting-to-core-of-math-problem.html>



Shannon McClintock Miller

## Being the Change She Wants to See in the Schools

Two words come to mind after spending time talking to Shannon McClintock Miller and reading her website and blog posts: *change* and *voice*. Change, as in fundamentally changing the way schools operate. And voice, as in listening to what kids have to say and giving them the tools to broadcast their ideas far and wide.

Miller is the district teacher librarian and technology coordinator at the Van Meter Community School in Iowa, and she has been instrumental in bringing change to the school and voice to the students during the four years she's worked there.

"I always had a love of creating, innovation, technology, reading, and learning," she says. "I wanted to create a school community that infused all those things. I wanted to make a difference in the lives of the students and others."

And colleagues and students credit her for doing just that.

- She helped put laptops into the hands of every student in grades 6–12.
- She co-teaches a personal learning network class with the principal of a school in Philadelphia. The two classrooms connect via Skype, and students learn how to build communities using tools such as Facebook, Twitter, and Animoto.
- She brings popular authors, game and software designers, and other experts into the classrooms via Skype.
- She connects classrooms—from kindergarten to grade 12—to peers in other states to share learning.
- She oversees an online photography club called Club Click, which taps into a hobby that gives students opportunities, ideas, support, and the tools they need to create, learn, and collaborate with others.

"She is an extraordinary teacher, and she is so talented at everything she does," says Julia Albaugh, one of Miller's students. "She has encouraged me to step out of my comfort zone and get involved in the National Honor Society. She has helped me have a voice through my PLN and through Twitter."

Miller admits she couldn't do it alone. She has the support of the staff, principal, superintendent, and school board, as well as parents and students. Van Meter has become a place where students find and pursue their interests and where students and staff alike provide learning and leadership, Miller says.

"We are part of an environment filled with respect, creativity, collaboration, connecting, thinking, learning, and change," Miller says. "At Van Meter, we want students to find



PHOTO CREDIT: MEGAN ENOS SKOGERSON

their passion. We encourage them to think, lead, and serve. We want them to be part of something bigger outside of the walls of their school and into the world. This is where every one of our students is going to make a difference."

Miller joined ISTE in 2009. Not content to be a passive member, she decided to get involved. She serves on the SIGMS Advocacy Committee, writes articles and tips for *L&L*, presented at ISTE 2010 in Denver, and will do so again in Philadelphia this year.

Even with all that on her plate, Miller makes herself available to teachers during school hours and on weekends to teach them to blog, Skype, and use Twitter, YouTube, and Diigo. She also keeps her library website (<http://tinyurl.com/yyde2gw>) packed with resources, ideas, and information. And she reaches out beyond the school walls. Early in the morning, after school, and during her lunch hour, she Skypes with teachers, administrators, and even students around the United States to talk about the role of the teacher librarian and offer advice about how ed tech can change education.

Colleagues often ask her why she devotes so much time to help schools outside of her community.

"It's my passion," she says. "It's not enough for just Van Meter to change. It's got to be universal change."

—Diana Fingal is senior editor of *L&L*.



## Collaborating with the World

CEO Don Knezek highlights connections made at home and abroad through ISTE headquarters in Washington, D.C.

Most of you are aware that our Washington, D.C., office helps ISTE interact with the U.S. Congress, government agencies, and other policy-making and regulatory bodies. A lesser-known benefit of our location in the U.S. capital is our ability to connect and collaborate with other national and international organizations—a critical strategy to achieve ISTE’s mission of advancing excellence in learning and teaching through the effective and innovative uses of technology.

Lynn Nolan, our senior strategic initiatives officer, is in charge of exploring, developing, and maintaining relationships with other educational member associations.

On April 26, ISTE hosts its eighth annual National Association Leadership Summit in Washington, D.C. This event typically attracts senior and executive leadership from 20 to 30 national and international associations as well as representatives from the U.S. Department of Education and, on occasion, other agencies and organizations. ISTE collaborates to establish a theme each year and then provides a noted expert speaker to provoke thought, stimulate an engaging and interactive forum, and document consensus on the theme’s

implications for associations and their members. Topics have included:

- Enhancing professional development with technology
- Tools for studying the future: Joel Barker’s Implications Wheel
- The National Education Technology Plan: Implications for associations
- Associations and the millennials

ISTE is also able to participate more intimately with individual associations and to provide leadership for groups of associations. We have exchanged a significant presence with many national conference holders, including the Association for Supervision and Curriculum Development, the National Council of Teachers of English, the National Science Teachers Association, and others as part of our collaborative relationships with them.

Through our advocacy efforts, ISTE’s senior government affairs officer, Hilary Goldmann, serves in a number of leadership and advisory roles for both formal and informal coalitions. She has served as past president of the Committee for Education Funding (a coalition of 90 education associations) and officer and board member of the National Coalition for Technology in Education and

Training (NCTET), composed of 16 organizations and companies in the D.C. area. She is also co-chair of the NCTET Mission Critical Campaign.

Of course, ISTE collaborates closely with the Consortium for School Networking (CoSN), the State Educational Technology Directors Association, and the Software and Information Industry Association on a host of projects.

As CEO, one of my responsibilities is to expand leadership for ed tech on the global stage. Much of our success outside the United States is a direct benefit of ISTE’s presence in Washington, D.C., by virtue of connections to many organizations that work beyond U.S. borders. Connecting with the eight regional associations of international schools and the Association for the Advancement of International Education, for example, guarantees ISTE a significant presence in schools in Southeast Asia, Central Africa, Europe, and the Mediterranean. Working with groups such as the National Council for Community and Education Partnerships significantly enhances our presence in Latin America.

ISTE’s office in D.C. is a powerful policy platform for ISTE members and so much more because of our expanding global relationships.

# Get plugged in!

## 5 things you can do today

to make the most of  
your ISTE membership



### Like us...on Facebook!

Stay up-to-date on all things ISTE—browse photos, view videos, like our links, and post your opinion on our wall!



### Get the latest on an ISTE Ning!

Utilize our Conference Ning to stay in the mix with ISTE 2011 pre-conference buzz. Then connect on our ISTE Community Ning to keep the conversation going year-round!



### Join and participate in a SIG.

Choose from more than 20 unique and interesting ISTE SIGs (special interest groups) covering everything from gaming and art to administration and international schools.



### Turn passion into action with ETAN.

Engage in the political process as an advocate for ed tech with the Ed Tech Action Network (ETAN). Visit [edtechactionnetwork.org](http://edtechactionnetwork.org) to get involved.



### Network and ask questions on LinkedIn.

Have a question you'd like to pose to colleagues around the world? Post it to our LinkedIn discussion group to access your global network!

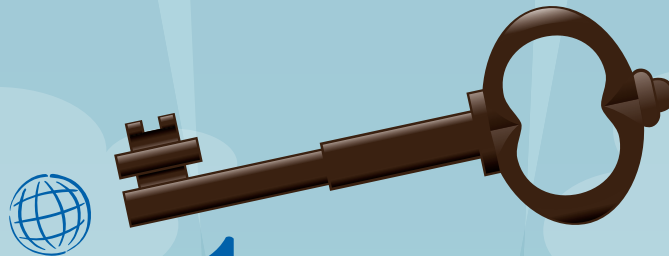


No matter what your ed tech interests are, ISTE has a community for you! Now more than 20,000 voices strong, our communities are growing every day—add your voice to the mix. Get the most out of your ISTE membership. Learn, share, and connect with an ISTE social network today! Visit our website for more information: [iste.org/connect](http://iste.org/connect)





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